SARDAR VALLABHBHAI NATIONAL INSTITUTE OF TECHNOLOGY, SURAT

Date: 13/06/2023

The minutes of the 58th meeting of the Senate held on May 31, 2023

The aforesaid meeting was conducted on May 31, 2023, 11:00 a.m. onwards in the hybrid mode. The following members were present in the meeting.

The following members were present in the meeting.

(1)	Dr. Anupam Shukla, Professor & Director, SVNIT, Surat	: Chairman
(2)	Dr. R. P. Tewari, Professor, DoAM, MNNIT Allahabad	: External Member
(3)	Dr. Omkarprasad S. Vaidya, Professor, IIM Lucknow	: External Member
(4)	Dr. M. A. Zaveri, Prof. & Dean (Academic), SVNIT, Surat	: Member
(5)	Dr. D. C. Jinwala, Prof. & Dean (R&C), SVNIT, Surat	: Member
(6)	Dr. C. D. Modhera, Prof. & Dean, (FW), SVNIT, Surat	: Member
(7)	Dr. Ravi Kant, Asso. Prof. & Dean (SW), SVNIT, Surat	: Member
(8)	Dr. Upena D. Dalal, Professor & Dean (A&RG), SVNIT, Surat	: Secretary
(9)	Dr. A. K. Panchal, Prof. & Head, DoEE, SVNIT, Surat	: Member
(10)	Dr. G.J. Joshi, Prof. & Head, DoCE, SVNIT, Surat	: Member
(11)	Dr. A. A. Shaikh, Prof. & Head, DoME, SVNIT, Surat	: Member
(12)	Dr. Z. V. P. Murthy, Professor, DoChE, SVNIT, Surat	: Member
(13)	Dr. J. K. Parikh, Professor, DoChE, SVNIT, Surat	: Member
(14)	Dr. J. N. Patel, Professor, DoCE, SVNIT, Surat	: Member
(15)	Dr. A. K. Desai, Professor, DoCE, SVNIT, Surat	: Member
(16)	Dr. C. H. Solanki, Professor, DoCE, SVNIT, Surat	: Member
(17)	Dr. S. A. Vasanwala, Professor, DoCE, SVNIT, Surat	: Member
(18)	Dr. S. M. Yadav, Professor, DoCE, SVNIT, Surat	: Member
(19)	Dr. K. A. Chauhan, Professor, DoCE, SVNIT, Surat	: Member
(20)	Dr. P. G. Agnihotri, Professor, DoCE, SVNIT, Surat	: Member
(21)	Dr. Rakesh Kumar, Professor, DoCE, SVNIT, Surat	: Member
(22)	Dr. D. R. Patel, Professor, DoCSE, SVNIT, Surat	: Member
(23)	Dr. S.N. Sharma, Professor, DoEE, SVNIT, Surat	: Member
(24)	Dr. A. Chowdhury, Professor, DoEE, SVNIT, Surat	: Member
(25)	Dr. R. Chudamani, Professor, DoEE, SVNIT, Surat	: Member
(26)	Dr. V. A. Shah, Professor, DoEE, SVNIT, Surat	: Member
(27)	Dr. J. N. Sarvaiya, Professor & I/c. Head, DoECE, SVNIT, Surat	: Member
(28)	Dr. R. Venkata Rao, Professor, DoME, SVNIT, Surat	: Member
(29)	Dr. K. P. Desai, Professor, DoME, SVNIT, Surat	: Member
(30)	Dr. J. Banerjee, Professor, DoME, SVNIT, Surat	: Member
(31)	Dr. V. H. Pradhan, Professor, DoMH, SVNIT, Surat	: Member
(32)	Dr. N. Adlakha, Professor, DoMH, SVNIT, Surat	: Member
(33)	Dr. M. A. Desai, Asso. Prof. & Head, DoChE, SVNIT, Surat	: Invitee
(34)	Dr. R. G. Mehta, Asso. Prof. & Head, DoCSE, SVNIT, Surat	: Invitee

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(35)	Dr. R. N. Dhavse, Asso. Prof. & Head, DoECE, SVNIT, Surat	: Invitee
(36)	Dr. J. M. Dhodiya, Asso. Prof. & Head, DoMH, SVNIT, Surat	: Invitee
(37)	Dr. S. K. Sahoo, Asso. Prof. & Head, DoC, SVNIT, Surat	: Invitee
(38)	Dr. D. V. Shah, Asso. Prof. & Head, DoP, SVNIT, Surat	: Invitee
(39)	Dr. Pramod Mathur, Registrar, SVNIT, Surat	: Secretary

The leave of absence of the following members was noted.

(1)	Dr. Shashi Bala Singh, Director, NIPER, Hyderabad	: External Member
(2)	Dr. P. L. Patel, Professor, DoCE, SVNIT, Surat	: Member
(3)	Dr. P. A. Parikh, Professor, DoChE, SVNIT, Surat	: Member
(4)	Dr. M. Chakraborty, Professor, DoChE, SVNIT, Surat	: Member
(5)	Dr. V. L. Manekar, Prof. & Dean (P&D), SVNIT, Surat	: Member
(6)	Dr. R. A. Christian, Professor DoCE, SVNIT, Surat	: Member
(7)	Dr. M. Mansoor Ahammed, Professor, DoCE, SVNIT, Surat	: Member
(8)	Dr. H. K. Raval, Professor, DoME, SVNIT, Surat	: Member
(9)	Dr. D. P. Vakharia, Professor, DoME, SVNIT, Surat	: Member
(10)	Dr. T. N. Desai, Professor, DoME, SVNIT, Surat	: Member
(11)	Dr. S. Kumar, Professor, DoME, SVNIT, Surat	: Member
(12)	Dr. K. N. Pathak, Professor, DoP, SVNIT, Surat	: Member
(13)	Dr. A. K. Shukla, Professor, DoMH, SVNIT, Surat	: Member
(14)	Dr. S. Jauhari, Professor, DoC, SVNIT, Surat	: Member
(15)	Mr. Raghav Khandelwal, Student General Secretary (SGS)	: Invitee
(16)	Mr. Sarvesh Kumar, Academic Affairs Secretary (AAS)	: Invitee
(17)	Ms. Janavi Popat, Research & Innovation Affairs Secretary (RIAS)	: Invitee

INTRODUCTION BY THE CHAIRMAN

At the outset, the Chairman Senate warmly welcomed the Members of the Senate, including the External Members who were present online Dr. R. P. Tewari, Professor, DoAM, MNNIT Allahabad and Dr. Omkarprasad S. Vaidya, Professor, IIM Lucknow, for the Senate meeting. Then, the Chairman briefed comprehensively the agenda items of the 58th meeting of the Senate.

Thereafter, the Dean (Academic) was requested to precede with the agenda items.

Items and resolutions:

Item 1	**To confirm the minutes of the 57th meeting of the Senate held on March 10, 2023 (*Annexure 1*).**
Reso. 1	Confirmed.
Item 2	**To note and approve the actions taken on the resolutions adopted in the 57th meeting of the Senate held on March 10, 2023 (*Annexure 2*).**
Reso. 2	Noted and approved.
Item 3	**To consider and adopt resolutions about the 'recommendations' made in the 15th meeting of the Standing Executive Committee (SEC) held on April 20, 2023.** Link: https://www.svnit.ac.in/Data/minutes/sec/15th%20SEC%20Minutes.pdf **Regarding absence in the Semester** There are number of applications received from the students regarding their absence in the semester beyond the specified days (75% percentage attendance required) in the semester as per the academic rules of the institute. There is a

	request from these students to allow them for appearing in the end semester examination.
	The above item is discussed in detail. Due to the shortage of attendance these students are not eligible for appearing in the end semester examination. In the view of their career in a long run, it was decided that the students with shortage of attendance less than 60% should be allowed to register for the Special Summer Classes during May-July before the supplementary examination. The students can register as per the following: 1. Students can register for maximum five number of courses. 2. Student registered for Special Summer Classes has to attend 30 number of theory classes of one hour each and 20 hours of laboratory. 3. Student has to pay Rs. 90000/- per subject irrespective of their category. The classes will begin immediately after the completion of end semester examination, i.e., from the next working Monday for a maximum of 10 weeks duration. The evaluation mechanism is same as per the regular semester. The end examination of this Special Summer Classes will be conducted along with the supplementary examination in the month of July/Aug. Only one faculty member will be associated with one subject. Faculty members will be paid honorarium as per the current institute norm (Rs. 2000 per theory hour and Rs. 1000 per laboratory hour).
Reso. 3	Minutes of 15th SEC is approved.
Item 4	**To consider and adopt resolutions about the 'recommendations' made in the 62nd meeting of the Institute Academic Advisory Committee (IAAC) held on 12 May, 2023.** Link:https://svnit.ac.in/Data/minutes/iaac/62nd%20MEETING%20OF%20INSTITUTE%20ACADEMIC%20ADVISORY%20COMMITTEE.pdf
Item 4.62.1	Regarding releasing Academic Regulation 2023-24 onwards and publishing on the institute web site. The draft version of the Academic Regulations is presented in the meeting. The various aspects of it are discussed. It is decided to circulate the draft version to all IAAC members and department faculty members for their review and comments. It is suggested that a committee consisting of Prof. D. C. Jinwala (HAG, DoCSE) Dean (R & C), Prof. K. P. Desai (Professor, DoME), Prof. A. A. Shaikh (HoD, DoME) and Dean Academics will go through the draft version of Academic Regulations for editorial and technical overview. The draft version of Academic Regulations including modifications and various suggestions received from IAAC members and will be presented before the ensuing Senate (**Annexure 62.1).**
Reso. 4.62.1	Suggestions were invited from faculty members and departments. Various suggestions were received and analyzed. Suggestions related to editorial are incorporated. Few suggestions related to procedural and rules are discussed and resolved as below to incorporate in the Academic Regulation booklet. 1. Admission to Dual Degree B.Tech. + M.B.A – after the third year of B.Tech., the students will be eligible having CGPA 8.0 or above and the selection will be done based written test/interview. 2. Admission criteria and related rules for M.Tech. sponsored and M.Tech. (Research) candidates will be looked into by an institute level committee for revision till then the present rules for the respective category will be followed. 3. Regarding the credits to be earned by Ph.D. students – there was a presentation and discussion by various departments in the 62nd IAAC regarding the minimum credits to be earned and the research methodology subject should be at the discretion

	of the department and supervisor. In this connection, it is resolved that resolution of 57th Senate item number 3(f) is modified and it should be read as "The Ph.D. student must earn minimum 12 credits as a part of coursework through three or four subjects (each of 3 or 4 credits) including One credit seminar of Two credits. The research methodology subject registration for a particular Ph.D. student is at the discretion of the respective supervisor and department. The student can register for the same course offered by any department." 4. A student must complete 50% of the credits cumulatively for being eligible to register in the next academic year of graduation. Otherwise, the student has to re-register for the same year of UG/PG in the next academic year with a condition that the maximum duration of the completion of the programme for UG – it is 7 years, and for PG – it is 4 years from the date of first registration is not crossed, otherwise the registration shall be cancelled/terminated.
Item 4.62.2	Regarding publishing the Curriculum Structure on the institute website with code assignment to the subject for each program as per the approved NEP curriculum scheme. The curriculum as per NEP implementation for each UG and M.Sc. programme is reviewed by the department for publishing on the institute website. It is decided to publish the curriculum which is effective from the academic year 2023-24 for UG and M.Sc. programmes (**Annexure 62.2).**
Reso. 4.62.2	The curriculum schemes are finalized by the respective departments and approved. It was decided to publish the syllabi for the first-year courses along with respective programme curriculum schemes on the institute web site.
Item 4.62.3.1	A request to change of supervisor and co-supervisor of Ms. Namrata Chandel (D17CE010-PEC) working under the supervision of Dr. P.L. Patel, Professor, DoCE, and Dr. R.K. Shrivastava, Ex-professor, SGSITS, Indore to Dr. P.G. Agnihotri, Professor, DoCE and Co-supervisor to Dr. J.N. Patel, Professor, DoCE as she wishes to change / modify her research area. (i) She has also requested to change her RPS committee members. (ii) She has also requested for two-year time extension since her admission is before the year of COVID. (iii) She has requested to carry forward the credit earned by her during course work. As per Academic Regulations 10.3.1 (a & b) and 11.5 (a), the IAAC has concluded that she shall be allowed for fresh registration and the coursework completed earlier by her will be counted as special consideration with fresh registration and she can appear for the first RPS.
Reso. 4.62.3.1	Approved
Item 4.62.3.2	To consider a request of Vrunda H. Agarkar (DS14AM007), enrolled in the PEC category and working under the supervision of Dr. A.K. Desai (Professor, Department of Civil Engineering), for 6 month extension for submission of Pre Synopsis and Ph.D. thesis The Scholar has completed the seven-and half-year duration (the extended duration for the COVID reason) on **July 13, 2022**. As per Academic Regulation 11.5 (a) and Reso. 2 of the 57th meeting of IAAC held on 22/7/2022. She completed the seven and half year duration (the extended duration for the COVID reason) on July 13, 2022, and she had been asked to complete the requirements of RPS, journal papers, pre-synopsis seminar, synopsis, and thesis submissions, on or before January 02, 2023 as per resolution under a 'special case consideration' (Resolution no. 54.8 of the 54th meeting of the DAAC held on 07/03/2023). But she did not complete the requirement within the time limit

	provided. In this view, her admission will be treated as terminated/cancelled as she has already completed 8 years. She has to apply again for PhD admission.
Reso. 4.62.3.2	Approved
Item 4.62.3.3	A request of Ms. Sejal Chandel (D21CE018), working under the supervision of Dr. V.L. Manekar and De. J.N. Patel, for the category conversion from the FSF to PEC. Approved as per Academic Regulation 11.3 (d).
Reso. 4.62.3.3	Noted
Item 4.62.3.4	To approve the 'discontinuation' of a supervisor for Ph.D. Student Ms. Neha Baghele (DS18CE003) enrolled in the FIR category. Currently the student jointly supervised by Dr. A.K. Khambete (Retired Professor, DoCE and Dr. R.A. Christian, Professor, DoCE. Now onwards she will supervise by only Dr. R.A. Christian, Professor, DoCE. Approved as per Academic Regulation 10.3.1. (a)
Reso. 4.62.3.4	Noted
Item 4.62.3.5	A request of Mr. Akshay J. Pawar (DS17AM007), working under the supervision of Dr. S.R. Suryawanshi, for the category conversion from the FIR to PEC. Approved as per Academic Regulation 11.3 (d).
Reso. 4.62.3.5	Noted
Item 4.62.3.6	To consider the request of Structural Engineering Section for addition of new Elective Subject "Structural Health Monitoring (SHM, CEST220)" in M.Tech. Structural Engineering. Approved (**Annexure 3.6).**
Reso. 4.62.3.6	Approved
Item 4.62.3.7	To consider the application received from Dawda Nandan H. (DS17CE010) working under the supervision of Dr. G.J. Joshi for 2 months extension for Ph.D. thesis submission. Approved as per Academic Regulation 12.2 (a).
Reso. 4.62.3.7	Approved
Item 4.62.3.8	A request of Mr. Rudradatta K. Mehta (D17AM001), working under the supervision of Dr. G.R. Vesmawala, for the category conversion from the FIR to PEC. Approved as per Academic Regulation 11.3 (d)
Reso. 4.62.3.8	Noted
Item 4.62.3.9	To approve an 'addition' of a co-supervisor i.e. Dr. Ambika Behl, Sr. Principal Scientist, CSIR-CRRI, New Delhi for the joint Ph.D. thesis supervision of Bicky Agarwal (D22CE008) enrolled in the FIR category. Currently, the student is being supervised by Dr. Ashish Dhamaniya, Associate Professor, Department of Civil. Approved as per Academic Regulation 10.6 (c)
Reso. 4.62.3.9	Approved
Item 4.62.4	A request of Supriya Mishra (DS20CO002), working under the supervision of Dr. B.N. Gohil and Dr. Suprio Ray, University of New Brunswick, Canada, for the category conversion from the FIR to PEC. Approved as per Academic Regulation 11.3 (d).
Reso.	Noted

4.62.4	
Item 4.62.5.1	To approve the reframing of Programme Educational Objectives (PEOs) and Programme Specific Outcomes (PSOs) of the 'Two' M. Tech. Programmes of the Department of Electrical Engineering.: Power Electronics & Electrical Drives and Power Systems (**Annexure 5.1).**
Reso. 4.62.5.1	Approved
Item 4.62.5.2	To approve the Ph.D. category conversion from the FIR to PEC of the four students of Department of Electrical Engineering respectively Athul Vijay P.K. (DS17EL008), Ujjval B. Vyas (DS18EL009), Harshada Nerkar (DS17EL002) and Anish Tiwari (DS18EL009). Approved as per Academic Regulation 11.3 (d).
Reso. 4.62.5.2	Noted
Item 4.62.5.3	To consider the course contents of the subject "Research Methodology" to be floated as an elective at PG level and as a compulsory subject for Ph.D. students at the department level. Syllabus of Research Methodology approved (**Annexure 5.3)** as three credits course with the scheme (3-0-0). The department is requested to submit the syllabus accordingly. The same subject can be offered to Ph.D. student also.
Reso. 4.62.5.3	Approved
Item 4.62.5.4	A request of Totan Das (D21EL010), working under the supervision of Dr. V.A. Shah for the category conversion from the FIR to PEC. Approved as per Academic Regulation 11.3(d).
Reso. 4.62.5.4	Noted
Item 4.62.5.5	A request of Deepkumar V Patel (D20EL001), working under the supervision of Dr. R. Chudamani, for the category conversion from the FIR to PEC. Approved as per Academic Regulation 11.3(d).
Reso. 4.62.5.5	Noted
Item 4.62.5.6	To approve reframing of the Programme Educational Objectives (PEOs) and Programme Specific Outcomes (PSOs) of B.Tech. Electrical Engineering as per the course structure in NEP. Approved (**Annexure 5.6).**
Reso. 4.62.5.6	The modified PSO3: "To design, simulate, and make prototype of electrical equipment like, electrical machines and drives, power transmission and distribution, power electronics converters, control systems and related fields.
Item 4.62.6.1	A request of Ms. Meenakshi Parashar (DS20EC003), working under the supervision of Dr. Shilpi Gupta, for the category conversion from FSF to PEC. Approved as per Academic Regulation 11.3 (d).
Reso. 4.62.6.1	Noted
Item 4.62.6.2	A request of Mr. Shashidhara M (DS20EC007), working under the supervision of Dr. Abhishek Acharya, for the category conversion from FIR to PEC. Approved as per Academic Regulation 11.3 (d).
Reso. 4.62.6.2	Noted
Item 4.62.7.1	A request of Mr. Nitin Bagre (DS18ME008), working under the supervision of Dr. A.D. Parekh, for the category conversion from the FIR to PEC. He has submitted

	Pre-Synopsis on 16/02/23. DAAC approved the same as per Academic Regulations for Doctoral Programmes July – 2019 [11.5 (b)]. i.e., The scholar who has delivered pre-synopsis of the thesis may be permitted by IAAC on recommendation of DAAC to leave the Institute and submit the thesis from outside within six months, they fulfil the provision of all other rules. Fellowship stopped w.e.f. 16/02/2023.
Reso. 4.62.7.1	Noted
Item 4.62.7.2	A request of Mr. Bhoskar Avishkar Ramchandra (D18ME012), working under the supervision of Dr. V.D. Kalyankar, for the category conversion from the FIR to PEC. He has submitted Pre-Synopsis on 30/12/2022. DAAC approved the same as per Academic Regulations for Doctoral Programmes July – 2019 [11.5 (b)]. i.e. The scholar who has delivered pre-synopsis of the thesis may be permitted by IAAC on recommendation of DAAC to leave the Institute and submit the thesis from outside within six months, they fulfill the provision of all other rules. Fellowship stopped w.e.f. 16/02/2023.
Reso. 4.62.7.2	Noted
Item 4.62.8.1	To consider the B.Tech.-I syllabus of the Engineering Science course for the Department of Civil Engineering is approved (**Annexure 8.1).**
Reso. 4.62.8.1	Approved
Item 4.62.8.2	A request of Ayushi Patel (D20CY014), working under the supervision of Dr. Kalpana Maheria, for the category conversion from FSF to PEC. Approved as per Academic Regulation 11.3 (d).
Reso. 4.62.8.2	Noted
Item 4.62.8.3	To consider the B.Tech.-I syllabus of the Applied Chemistry for the Department of Chemical Engineering is approved (**Annexure 8.3**).
Reso. 4.62.8.3	Approved
Item 4.62.9.1	To approve the Ph.D. category conversion from the FRS to PEC of two students of Department of Physics respectively Jasani Jaykumar Rajeshbhai (D20PH001) and Zainitkumar Arjanbhai Dhameliya (D20PH010). Mauleshkumar Dahyabhai Vala (DS20PH003) request category conversion from the FIR to PEC. Approved as per Academic Regulation 11.3 (d).
Reso. 4.62.9.1	Noted
Item 4.62.9.2	The requests of Bhautik Gevariya (D20PH014) for the Ph.D. category conversion from FIR to PEC and Akram Nasimbhai Ansari (DS21PH002) for the Ph.D. category conversion from FRS to PEC. Approved as per Academic Regulation 11.3 (d).
Reso. 4.62.9.2	Noted
Item 4.62.9.3	A request of Bhavin Moida (D20PH005), working under the supervision of Dr. K.N. Pathak for the category conversion from the FRS to PEC. Approved as per Academic Regulation 11.3 (d).
Reso. 4.62.9.3	Noted
Item	To approve the B.Tech. 1st year course on Physics for the Electrical Engineering

4.62.9.4	Department is Approved (**Annexure 9.4).**
Reso. 4.62.9.4	Approved
Item 4.62.9.5	To consider a request of Adish V. Rawal (D17PH004), enrolled in the PEC category and working under the supervision of Dr. L.K. Saini and Dr. D.V. Shah, for 2-month (upto 10/6/2023) extension for submission of Ph.D. thesis. Synopsis submitted on 10/10/2022. Approved as per Academic Regulation 12.2 (a)
Reso. 4.62.9.5	Noted
Item 4.62.10	To discuss the proposal for electives in foreign language like German and French. (Reso. 1 of 1st meeting of the DAAC held on 4/5/23) The students of SVNIT need to acquire more skills and knowledge to keep up with the global competition. I this regard, the department would offer 2 languages (i) French (ii) German as elective subject to UG students in 5th and 6th semesters and PG students in 2nd semester. These language electives can be floated from the academic Year 2023-24. It was proposed that for teaching these two languages, the experts may be invited on an hourly basis. As it is a language course the bath size of 30 students in one class will be preferred. The subject offering can be started with a maximum of two batches for each language. The selection of students will be based on CGPA as per our existing institute norms. Syllabus was attached herewith. Approved (**Annexure 62.10).**
Reso. 4.62.10	Approved
Item 4.62.11	Admission Criteria for the Ph.D. Admission (Eligible Degree) The Ph.D. Degree Certificate should be changed (name of discipline to be omitted) so as to include the interdisciplinary research. The candidates from discipline other than Chemical Engineering & allied branches should exhibit the research potential in the desired field of Chemical Engineering. Further upon changing the format, the degree allowed for the Ph.D. admission in the Department of Chemical Engineering. Regarding the PhD degree certificate, the HoD of Chemical Department is requested to provide the copy of such degree certificates from IITs and other reputed institutes for further discussion. For UG and PG eligible degree for PhD admission in Department of Chemical Engineering item is deferred for the next IAAC.
Reso. 4.62.11	Noted
Item 4.62.12	Director informed the members about the scheduling of the Academic Audit. Academic Audit will be scheduled in the month of August-September 2023.
Reso. 4.62.12	Noted
Item 4.62.13	Regarding the issuing digitally signed Degree Certificate. Director informed the members during the recent visit to IIT Gandhinagar, it is observed that IIT Gandhinagar is issuing the digitally singed Degree Certificate. It is suggested by the Director that Associate Dean and Staff members of Academic Section should explore such option and visit the IIT Gandhinagar in this connection.
Reso. 4.62.13	Noted
Item 5	To note a request of Bhosale Suraj Dharamraj (DS17AM010) for an extension to the last date of the thesis submission. The Research Scholar is working under the supervision of Dr. A. K. Desai Last date of thesis submission was 16/3/22, submitted on 27/3/22, delay by 11 days. (As per

	resolution 48.6 of the 48th Senate held on 26/6/2020, the house authorized the Chairman, Senate to use his own discretion and approve such short term extensions on case to case basis and allow the student to submit thesis in future. In the present case, the Chairman approved the extension and it was resolved to take up further process of evaluation on the submitted thesis.
Reso. 5	Noted.
Item 6	To consider MoUs signed with Indian Institute of Technology, Gandhinagar, and Dhirubhai Ambani Institute of Information and Communication Technology (DA-IICT) Gandhinagar. The MoUs were sign between SVNIT and Indian Institute of Technology, Gandhinagar, and Dhirubhai Ambani Institute of Information and Communication Technology (DA-IICT) Gandhinagar for academic, research collaboration and student exchange programmes. It was also resolved to create a shared pool of faculty resources between the two institutions. The MoUs copies are attach in **(Annexure 3).**
Reso. 6	Noted.
	Item from the Chair
Item 7	Item 6 is appended with following. The list of active MoUs signed by the Institute with an objective of various activities such as exchange of scholars, researchers and students for research, co-authoring of scholarly and research publications, exchange of scholars, researches and students for seminars, conferences, workshops and other academic interaction meetings.
Reso. 7	Noted by the Senate.
Item 8	To replace the audit course Holistic Empowerment and Human Values for better execution at B.Tech.-I and M.Sc.-I by the offering 2 credits course from the following options. 1. Consciousness and Values 2. Professional Ethics Values and Consciousness 3. Indian Value System and Social Consciousness 4. Incredible India and Social Consciousness Covering various aspects of Indian Culture, Heritage, Constitution, Knowledge System, Human Values, Consciousness
Reso. 8	After discussion, it is resolved to offer 2 credit course titled Indian Value System and Social Consciousness. It will be offered in ODD semester for following department programmes: Mechanical, Civil, Chemical, Physics and Chemistry and in EVEN semester for following department programmes: Artificial Intelligence, Computer Science and Engineering, Electrical, Electronics and Mathematics. The detailed syllabus is as per the **Annexure 4**.
Item 9	To consider the Ph.D. admission category and Category conversion • PhD Admission Category 1. QIP – (QIP) scholarship 2. Full-time Institute Research scholars candidate (availing scholarship from MoE for 3 to 5 years) – (FIR) 3. Part-time / Full-time External Research Scholar candidate (self-sponsored, sponsored by an organization) – (ERS) 4. Full-time project research scholar (availing scholarship from sponsored research project DST/SERB etc.) (FPS) • Category Conversion 1. ERS to FPS (if project funds are available – approval of DAAC, Dean (R&C), IAAC, and relieving letter from present employer. Scholarship will be paid as

	per research project agency rule.) 2. FPS to ERS (by default if project funds are not available – approval of DAAC, Dean (Academics), Dean (R&C), IAAC, and No Objection Certificate from the employer, if employed, required.) 3. FIR to ERS (by default on completion of maximum scholarship duration or candidate joining any organization/institute – approval of DAAC, Dean (Academics), IAAC, and No Objection Certificate from the employer, if employed, required.)
Reso. 9	The above PhD admission categories and Category conversions are approved from the next academic year 2023-24. For PS to FS category conversion, the institute level committee will be formed for appropriate recommendation.

The meeting ended with the thanks to the Chair.

REGISTRAR
SECRETARY- SENATE

DIRECTOR
CHAIRMAN-SENATE

SARDAR VALLABHBHAI NATIONAL INSTITUTE OF TECHNOLOGY, SURAT

Date: 22/03/2023

The minutes (updated) of the 57th meeting of the Senate held on March 10, 2023

The aforesaid meeting was conducted on March 10, 2023, 10:00 a.m. onwards in the hybrid mode. The following members were present in the meeting.

The following members were present in the meeting.

(1)	Dr. Anupam Shukla, Professor & Director, SVNIT, Surat	: Chairman
(2)	Dr. Shashi Bala Singh, Director, NIPER, Hyderabad	: External Member
(3)	Dr. M. A. Zaveri, Prof. & Dean (Academic), SVNIT, Surat	: Member
(4)	Dr. C. D. Modhera, Prof. & Dean, (Faculty Welfare), SVNIT, Surat	: Member
(5)	Dr. V. L. Manekar, Prof. & Dean (P&D), SVNIT, Surat	: Member
(6)	Dr. Ravi Kant, Dean (SW), SVNIT, Surat	: Member
(7)	Dr. Upena D. Dalal, Professor & Dean (A&RG), SVNIT, Surat	: Secretary
(8)	Dr. A. K. Panchal, Prof. & Head, DoEE, SVNIT, Surat	: Member
(9)	Dr. Jyotirmay Banerjee, Prof. & Head, DoME, SVNIT, Surat	: Member
(10)	Dr. G.J. Joshi, Prof. & Head, DoCE, SVNIT, Surat	: Member
(11)	Dr. P. L. Patel, Professor, DoCE, SVNIT, Surat	: Member
(12)	Dr. J. N. Patel, Professor, DoCE, SVNIT, Surat	: Member
(13)	Dr. A. K. Desai, Professor, DoCE, SVNIT, Surat	: Member
(14)	Dr. C. H. Solanki, Professor, DoCE, SVNIT, Surat	: Member
(15)	Dr. K. A. Chauhan, Professor, DoCE, SVNIT, Surat	: Member
(16)	Dr. P. G. Agnihotri, Professor, DoCE, SVNIT, Surat	: Member
(17)	Dr. Rakesh Kumar, Professor, DoCE, SVNIT, Surat	: Member
(18)	Dr. R. A. Christian, Professor DoCE, SVNIT, Surat	: Member
(19)	Dr. S. M. Yadav, Professor, DoCE, SVNIT, Surat	: Member
(20)	Dr. P. A. Parikh, Professor, DoChE, SVNIT, Surat	: Member
(21)	Dr. Mousumi Chakraborty, Professor, DoChE, SVNIT, Surat	: Member
(22)	Dr. D. R. Patel, Professor, DoCSE, SVNIT, Surat	: Member
(23)	Dr. S.N. Sharma, Professor, DoEE, SVNIT, Surat	: Member
(24)	Dr. Anandita Chowdhury, Professor, DoEE, SVNIT, Surat	: Member
(25)	Dr. Varsha A. Shah, Professor, DoEE, SVNIT, Surat	: Member
(26)	Dr. J. N. Sarvaiya, Professor & I/c. Head, DoECE, SVNIT, Surat	: Member
(27)	Dr. R. Venkata Rao, Professor, DoME, SVNIT, Surat	: Member
(28)	Dr. H. K. Raval, Professor, DoME, SVNIT, Surat	: Member
(29)	Dr. D. P. Vakharia, Professor, DoME, SVNIT, Surat	: Member
(30)	Dr. K. P. Desai, Professor, DoME, SVNIT, Surat	: Member
(31)	Dr. A. A. Shaikh, Professor, DoME, SVNIT, Surat	: Member
(32)	Dr. Shailendra Kumar, Professor, DoME, SVNIT, Surat	: Member
(33)	Dr. A. K. Shukla, Professor, DoMH, SVNIT, Surat	: Member
(34)	Dr. V. H. Pradhan, Professor, DoMH, SVNIT, Surat	: Member

(35)	Dr. Neeru Adlakha, Professor, DoMH, SVNIT, Surat	: Member
(36)	Dr. Smita Jauhari, Professor, DoC, SVNIT, Surat	: Member
(37)	Dr. M. A. Desai, Asso. Prof. & Head, DoChE, SVNIT, Surat	: Invitee
(38)	Dr. Rupa G. Mehta, Asso. Prof. & Head, DoCSE, SVNIT, Surat	: Invitee
(39)	Dr. P. N. Patel, Asso. Prof. & Head, DoECE, SVNIT, Surat	: Invitee
(40)	Dr. J. M. Dhodiya, Asso. Prof. & Head, DoMH, SVNIT, Surat	: Invitee
(41)	Dr. S. K. Sahoo, Asso. Prof. & Head, DoC, SVNIT, Surat	: Invitee
(42)	Dr. Dimple V. Shah, Asso. Prof. & Head, DoP, SVNIT, Surat	: Invitee
(43)	Dr. Pramod Mathur, Registrar, SVNIT, Surat	: Secretary

The leave of absence of the following members was noted.

(1)	Dr. R. P. Tewari, Professor, DoAM, MNNIT Allahabad	: External Member
(2)	Dr. Omkarprasad S. Vaidya, Professor, IIM Lucknow	: External Member
(3)	Dr. D. C. Jinwala, Prof. & Dean (R&C), SVNIT, Surat	: Member
(4)	Dr. Z. V. P. Murthy, Professor, DoChE, SVNIT, Surat	: Member
(5)	Dr. Jigisha K. Parikh, Professor, DoChE, SVNIT, Surat	: Member
(6)	Dr. M. Mansoor Ahammed, Professor, DoCE, SVNIT, Surat	: Member
(7)	Dr. S. A. Vasanwala, Professor, DoCE, SVNIT, Surat	: Member
(8)	Dr. R. Chudamani, Professor, DoEE, SVNIT, Surat	: Member
(9)	Dr. T. N. Desai, Professor, DoME, SVNIT, Surat	: Member
(10)	Dr. K. N. Pathak, Professor, DoP, SVNIT, Surat	: Member
(11)	Mr. Raghav Khandelwal, Student General Secretary (SGS)	: Invitee
(12)	Mr. Sarvesh Kumar, Academic Affairs Secretary (AAS)	: Invitee
(13)	Ms. Janavi Popat, Research & Innovation Affairs Secretary (RIAS)	: Invitee

INTRODUCTION BY THE CHAIRMAN

At the outset, the Chairman Senate warmly welcomed the Members of the Senate, including the External Member Dr. Shashi Bala Singh, Director, NIPER, Hyderabad, for the Senate meeting. Then, the Chairman briefed comprehensively the agenda items of the 57th meeting of the Senate.

Thereafter, the Dean (Academic) was requested to precede with the agenda items.

Items and resolutions:

Item 1	**To confirm the minutes of the 56th meeting of the Senate held on December 30, 2022.** ***Annexure 1***
Res. 1	Confirmed.
Item 2	**To note and approve the actions taken on the resolutions adopted in the 56th meeting of the Senate held on December 30, 2022.** ***Annexure 2***
Res. 2	Noted and approved.
Item 3	**To consider and adopt resolutions about the 'recommendations' made in the 60th meeting of the Institute Academic Advisory Committee (IAAC) held on January 31, 2023.** Link: https://svnit.ac.in/Data/minutes/iaac/Minutes%20with%20Annexure.pdf
Item 3.1	To discuss the reports submitted by the committee about the implementation of the National Education Policy (NEP) 2020 at SVNIT and adopt a resolution for implementation from the Academic year 2023-24. Departments are advised to submit their course structure as per NEP within 15 days so that

	it can be discussed and approved in the next IAAC. The template was circulated to HoDs for deciding the Exit-Equivalence Degree awarding, Entry-Requirement, Curriculum Structure, and Subjects list for Core / Specialization. The guidelines and the template are attached in **Annexure 1.4.**
Item 3.2	To consider the recommendations of 101th DAAC, Department of Chemical Engineering conducted on 27/12/2022. (Minutes Ref. No. DoChE/154/2022-23 dated 09/01/2023) The following are the resolutions after discussion: GATE is a standard examination and the candidate should have cleared only once. As per the O.M. of MHRD dated 30 January 2019 NET / GATE National level examinations are mandatory. It is resolved that from the next academic year 2023-24 the written test requirement as per Academic Rules and Regulation for Doctoral Programmes July 2019 point 2.2.2, is not mandatory for the department. The written test may be conducted at the discretion of the department. The department has to publish the criteria for the selection process on the institute website along with the list of eligible candidates called for the admission process. The department should provide the eligible list of degrees for the PhD admission in the respective discipline approved by a DAAC of the respective department and the same information will be included in the information brochure. With reference to resolution 2.2 of 60th IAAC mentioned above, the cut-off criteria in a written test is at the discretion of the department. The department has to publish the criteria for the selection process on the institute website along with the list of eligible candidates called for the admission process. The comprehensive examination as per Academic Rules and Regulation for Doctoral Programmes July 2019 point number 3 will be discontinued for the new entrant from the academic year 2023-24. The change in "No Objection Certificate" letter format is discussed and it will be included in the new academic admission form. The proposed format is attached as **Annexure-2.2**. The process / product patent granted will be considered towards the granting the pre-synopsis in the thesis evaluation point number 12 of Academic Rules and Regulation for Doctoral Programmes July 2019. It should be read as below: "The permission for conduct of Pre-synopsis shall be given only when the student has acceptance of (i) minimum TWO Technical papers in Journals enlisted in SCI/SCI(E) (Clarivate Analytics) / Scopus/Web of Science (non-paid journal) or (ii) minimum TWO process / product patents granted or (iii) ONE Technical paper in Journals enlisted in SCI/SCI(E) (Clarivate Analytics) / Scopus/Web of Science (non-paid journal) and ONE process / product patent granted.
Item 3.3	To approve the 'addition' of an external Supervisor, i.e. Dr. Manoranjan Parida (Director, CSIR – Central Road Research Institute, New Delhi), for the Ph.D. thesis supervision of Student Ayushi Shah (DS21CE009). Currently, the Ph.D. Student is being supervised by Dr. G.J. Joshi (Professor, Department of Civil Engineering, SVNIT, Surat). Approved as per Academic Regulation 10.6 (c).
Item 3.4	To consider the recommendations of DAAC, Department of Computer Science & Engineering, to discuss and adopt resolutions about 'the proposed the four year B.Tech. AI programme proposal to commence from the academic Year 2023-24. The DAAC (Department of Computer Science & Engineering) recommended the four year B.Tech. AI programme. Advised to submit B.Tech. AI curriculum scheme as per NEP within 15 days for discussion in next IAAC.
Item 3.5	To approve the Ph.D. category conversion of Mr. Santosh L. Kakad (D20EL010) of Department of Electrical Engineering from the FIR to the PEC. Approved as per Academic Regulation 11.3 (d).

Item 3.6 To discuss and adopt resolutions about 'the proposed revised curricula and PEOs, POs and PSOs of the 'Two' M. Tech. Programmes : Power Electronics & Electrical Drives and Power Systems of the Department of Electrical Engineering. Head of the Department is advised to discuss the matter with Dean (Academic) before next IAAC.

Item 3.7 To approve the 'addition' of a co-supervisor, i.e. Dr. Akanksha Shukla (Assistant Professor, Department of Electrical Engg. SVNIT, Surat) for the Ph.D. thesis supervision of Student Tejavath Suresh (D21EL011). Currently, the Ph.D. Student is being supervised by Dr. V.A. Shah (Professor, Electrical Engg., SVNIT, Surat). Approved as per Academic Regulation 10.6 (c)

Item 3.8 To consider examination scheme for the course of Summer Training (EE405) in curriculum of B.Tech IV. Approved as per DAAC recommendation

Course Code	Course	L	T	P	Credits	Examination Scheme		
		Hrs	Hrs	Hrs		Internal Marks	External Marks	Total Marks
EE405	Summer Training	0	0	0	02	50	50	100

Item 3.9 To discuss and adopt a resolution about discontinuing Ph.D. Written Test and Ph.D. Comprehensive Exam.
Resolved as follows: With reference to Item 3.2 mentioned above, the cut-off criteria in a written test is at the discretion of the department. The department has to publish the criteria for the selection process on the institute website along with the list of eligible candidates called for the admission process.
The comprehensive examination as per Academic Rules and Regulation for Doctoral Programmes July 2019 point number 3 will be discontinued for the new entrant from the academic year 2023-24.

Item 3.10 A request of Mr. Rohit Chirag V (DS16EL003), working under the supervision of Dr. P.B. Darji and Dr. H.R. Jariwala, for the category conversion from the FIR to PEC recommended by the DAAC.
Mr. Rohit Chirag (DS16EL003) has to return scholarship amount of overlap period of 11 days. During these days he availed the scholarship from institute and the financial package from industry. As penalty, he has to pay 1 month scholarship amount (Rs. 35000/-) to Account Section. His request for conversion FIR to PEC category is accepted subjected to the return of scholarship amount of overlap period of 11 days and payment of 1 month scholarship (Rs. 35000/-).

Item 3.11 To discuss and adopt a resolution about discontinuing Ph.D. Comprehensive Exam, the recommendations of DAAC, Department of Electronics Engineering. Refer to Resolution numbers 2.2 and 2.5 of 60th IAAC (Item 3.2).

Item 3.12 To discuss and adopt a resolution about discontinuing Ph.D. Written Test, the recommendations of DAAC, Department of Electronics Engineering. Agenda Item discussed in length. Refer to Resolution numbers 2.2 and 2.5 of 60th IAAC (Item 3.2).

Item 3.13 An IAAC approval of a request of Mr. Patel Jigar Lallubhai (D17ME004), working under the supervision of Dr. D. I. Lalwani, for extension to submit the thesis. The thesis will be submitted upto 10/12/2022. Request is approved.

Item 3.14 To approve the 'addition' of a Co-supervisor, i.e. Dr. Jyotirmay Banerjee (Professor Department of Mechanical Engineering, SVNIT, Surat), for the Ph.D. thesis supervision of Student Mr. Rahul Kumar (DS21ME003). Currently, the Ph.D. Student is being supervised by Dr. Prabhanshu (Assistant Professor, Department of Mechanical Engg., SVNIT, Surat. Approved as per Academic Regulation 10.6 (c).

Item 3.15 A request of Mr. Hemant Bhardwaj (D19MA002), working under the supervision of Dr. Neeru Adlakha, for the category conversion from the FIR to PEC. Approved as per Academic Regulation 11.3 (d).

Item 3.16	To discuss and adopt resolutions about the "Dual Degree Programme: Bachelor of Technology and Master of Technology in Mathematics and Computing for the consideration of the IAAC. Head of the Department is advised to submit the curriculum scheme as per NEP within 15 days or before next IAAC.
Item 3.17	To discuss and adopt resolutions about 'the proposed the four year B.Tech. (Engg. Phys.) programme proposal to be commenced from the academic Year 2023-24. Head of the Department is advised to submit curriculum scheme as per NEP within 15 days or before next IAAC.
Item 3.18	To discuss and adopt the resolution regarding M.Tech. Dissertation Evaluation Committee. It is resolved that, M.Tech. Dissertation Evaluation Committee will be re-structured. The evaluation of group of students working in a similar broad area will be carried out by a group of internal examiners consist of minimum three examiners including supervisor. The number of groups of students and examiners will be decided by the HoD based on specialization. There will be no Chairman in Committee and external examiner for evaluation with immediate effect.
Item 3.19	To discuss and adopt the resolution regarding Research Progress Committee for Ph.D. It is resolved that Research Progress Committee structure will remain same as per existing, consist of two nominees of examiners one from supervisor and another from DAAC chairman but there will be no Chairman in the Committee with immediate effect. The same committee members will evaluate the Credit Seminar of PhD Scholar.
Item 3.20	To discuss and adopt the resolution regarding Time-table Committee at the institute level. It is resolved that Time-table Committee will be constituted at the institute level to frame the timetable for all years. This committee consists of timetable coordinators from the respective department and Associate Dean (Academic) will be the chairman of the committee. The committee members' names will be announced in the month of April of every academic year.
Item 3.21	To discuss and adopt the resolution regarding Ph.D. Programme and Admission suggested modifications **Annexure 13.1** For all Engineering Department, GATE will be compulsory for admission and getting Institute fellowship for FIR student. Candidate with Master's degree in science must have qualified in GATE/NET for fellowship. As per the O.M. of MHRD dated 30 January 2019 NET / GATE National level examination are mandatory for availing institute fellowship. Sub items (2), (3) and (4) refer to Item 3.2. Sub item 5 is deferred. For sub item (6): It is decided to reduce the credit requirement from 16 credits to 12 credits and the subject "Research Methodology" is not mandatory. Each department is also requested to offer "Research Methodology" at PG level and the same course may be registered by the PhD student from any department. The course code for the "Research Methodology" subject offered by respective department will be different. The 12 credits should be earned within first two semesters. These 12 credits may be earned through (i) three theory courses or (ii) two theory courses and one credit seminar. For sub item (7), refer Item 3.2. For sub item (8), No objection certificate is revised and attached as **Annexure 2.2**. At present there is no relaxation in stay at campus for one semester. For sub item (9) will be discussed in next IAAC. For sub item (10) will be discussed in next IAAC.
Item 3.22	It is discussed and approved Academic Calendar for academic Year 2023-24. **Annexure 14.1.**
Item 3.23	To discuss the Minor program running as per NEW education policy NEP 2020

	implementation. For better implementation of Minor and Honors programs it is decided that the Minor and Honors program from respective department will be executed as per NEW education policy NEP 2020.
	Item by Chair
Item 3.24	To include the date of convocation in the academic calendar for better planning and execution. For better planning and execution of convocation program, the convocation date should be announced with academic calendar. After discussion it is resolved that the convocation shall be scheduled either of 15 September which is celebrated as Engineer's Day – a birth anniversary of Dr. Mokshagundam Visvesvaraya or 31 October which is a birth anniversary of the Iron Man of India, Sardar Vallabhbhai Patel.
Res. 3	Items 3.1 to 3.15 of 60th IAAC was approved by Senate. Items 3.16 and 3.17 regarding Dual Degree Programme: Bachelor of Technology and Master of Technology in Mathematics and Computing and B.Tech. (Engg. Phys.) programme for the consideration of the IAAC. It is resolved for considering both these proposal for starting from the academic year 2024-25. HoDs are also advised for exploring the ways for better placement scenarios and improving the rank of admitted students in these programs. Item 3.18 regarding the re-structuring of M.Tech. Dissertation Evaluation Committee: For M.Tech. and M.Sc. programs, the Dissertation Evaluation Committee will be re-structured. The evaluation of group of students working in a similar broad area will be carried out by a group of internal examiners consist of minimum three examiners including supervisor. The number of groups of students and examiners will be decided by the HoD based on specialization. There will be no Chairman in Committee and external examiner for evaluation with immediate effect. Item 3.19 It is resolved that Research Progress Committee structure will remain same as per existing, consist of two nominees of examiners one from supervisor and another from DAAC chairman but there will be no Chairman in the Committee with immediate effect. The same committee members will evaluate the Credit Seminar of PhD Scholar. The Chairman will be appointed through DAAC chairman for Pre-synopsis and through Dean Academic for Final viva-voce examination of PhD candidate. Item 3.20 of 60th IAAC was approved by Senate. Item 3.21 regarding discussing and adopting the resolution regarding Ph.D. Programme and Admission suggested modifications, for sub-item 6, the resolution in 60th IAAC minutes is discussed and resolved as follows. It is decided to maintain the credit requirement to 16 credits along with the subject "Research Methodology" for every department. Each department shall offer a Research Methodology subject at PG level and the same course may be registered by the PhD student from any department. The 16 credits should be earned within the first two semesters. Four credits should be earned through the subject "Research Methodology". The remaining 12 credits may be earned through (i) three / four theory courses or (ii) two / three theory courses and one credit seminar. Item 3.22 regarding Academic Calendar for academic Year 2023-24 is approved with minor suggestion: the duration for scheduling PhD Research Progress Seminar is extended till the last working day of the week before the beginning of the next semester. **(Annexure 14.1)** Item 3.23 to discuss the Minor program running as per NEW education policy NEP 2020 implementation. For better implementation of Minor and Honors programs, it is decided that the Minor and Honors programs from respective department will be executed as per NEW education policy NEP 2020. Item 3.24 regarding including the date of convocation in the academic calendar for better

	planning and execution. After discussion, it is resolved that the convocation shall be scheduled either on 15 September or 31 October.
Item 4	**To consider and adopt resolutions about the 'recommendations' made in the 61st meeting of the Institute Academic Advisory Committee (IAAC) held on February 28, 2023.** Link: https://svnit.ac.in/Data/minutes/iaac/61ST%20MEETING%20OF%20THE%20INSTITUTE%20ACADEMIC%20ADVISORY%20COMMITTEE.pdf
Item 4.1	The curriculum structure and Multiple Entry Multiple Exit (MEME) for implementing National Education Policy (NEP) 2020 are discussed. Various suggestions like the seamless movement of students should be allowed across NITs, IITs and IIITs. The screening (written) test will be conducted for the students coming from other NITs, IITs and IIITs. No screening test for SVNIT's own students who were admitted in the first year of the program. The examination pattern for the subject will be the same as that of existing pattern – continuous evaluation (20), Mid-semester (30), and End semester (50) marks for theory and practical (40%) continuous evaluation and (60%) end-semester evaluation. For vocational training / experiential learning, the evaluation criteria and mode of evaluation (written / practical / continuous) will be decided and announced by the respective department. The total marks of evaluation for vocational training / experiential learning are 100. The Multiple Entry and Multiple Criteria and Curriculum Structure depicted in **Annexure 1.1** is approved by 61st IAAC for further approval in the next Senate meeting for implementation from the Academic year 2023-24. The curriculum template is indicative of designing the curriculum by the respective department. In the curriculum template, a total of 10 Elective subject slots are proposed (1) One Elective in the third semester (2) One Elective in the fourth semester (3) Two Electives in the fifth semester (4) Two Electives in the sixth semester (5) Four Electives in the seventh semester. Out of these elective subject slots, One slot in the fifth semester, One slot in the sixth semester, and Two slots in the seventh semester can be used for defining the specialization track across the departments or Minor / Honour. The rules and regulations for B.Tech. and M.Tech. will be announced in connection with NEP 2020 implementation from the academic year 2023-24 covering all guidelines for specialization track, Minor, Honour, Vocational training, and Experiential learning. The curriculum defined by various departments are attached as **Annexure 1.2 of 61st IAAC (Total 17 curriculum schemes 6 UG Engineering existing programs + 3 Science M.Sc. Integrated programs + 3 UG new Engineering programs + 4 PG programs + 1 Dual Degree program).**
Item 4.2	The action plan with starting of the program from the next academic year, faculty requirement, student strength, and infrastructure requirement with intake strength of student for each program are discussed and approved for further approval of the senate and finance committee and the detail is attached in **Annexure 2.1 of 61st IAAC and forwarded for BoG notification of new programs for admissions through JoSAA and CCMT respectively.** The programs considered for the next academic year, 2023-24 are as follows: (1) M.Tech. Computer Science and Engineering with Specialization in Information Security and Privacy (2) M.Tech. Computer Science and Engineering with Specialization in Data Science (3) M.Tech. Mechanical Engineering with Specialization in Machine Design (4) B.Tech. Artificial Intelligence and (5) Five years integrated program in Master of Business Administration. (6) Two years program in Master of Business Administration (MBA) (7) B.Plan. (8) B.Tech. Electronics and VLSI Engineering. It is resolved that the program B.Tech. and M.Tech. Dual Degree Programme in Mathematics

	and Computing will be considered for starting from the academic year 2024-25.
Item 4.3	The curriculum structure and syllabus of B.Tech. AI is presented by the HoD of the Department of Computer Science and Engineering as per the NEP curriculum structure format. It is approved for further approval by the Senate. The curriculum of B.Tech. Artificial Intelligence is attached in **Annexure 1.2 of 61st IAAC**.
Item 4.4	To discuss and adopt resolutions about the curriculum and syllabus of the Dual Degree Programme: Bachelor of Technology and Master of Technology in Mathematics and Computing in reference to resolution no. 61.17.1 of 61st meeting of BoG held on 27th September, 2022. The head of the department is advised to explore the placement scenarios of the currently running five years integrated M.Sc. in Mathematics program which will help in starting the new program B.Tech. and M.Tech. in Mathematics and Computing. It is resolved to consider the item for starting the program from the academic year 2024-25.
Item 4.5	The head of the mathematics department and faculty of management presented Two years PG program in MBA, and the scheme and syllabus are approved. From the chair, it is requested for proposing Five years integrated program in Master of Business Administration with an exit option after four years B.Tech. degree. Both these programs will be started under the Department of Management Studies. The curriculum of Five years integrated program in Master of Business Administration with an exit option after four years B.Tech. degree and Two years PG program in MBA are attached in **Annexure 1.2**.
Item 4.6	To consider a proposal to start a joint Ph.D. Program with Indian Institute of Technology, Mandi, and Indian Institute of Technology, Jammu. A draft agreement to be sign for the purpose between the two institutes is attached herewith. The draft agreement is reviewed by the respective institute. The MoU between SVNIT and these institutions is already signed for such academic collaboration. It was also resolved to create a shared pool of faculty resources between the two institutions. It is resolved to forward the proposal of the joint Ph.D. program for approval by the Senate starting from the year 2023-24. The MoU copies are attached in **Annexure 6.1 of 61st IAAC**.
Item 4.7	The head of the Chemical Department presented the view that the faculty involved in the first year has to do the duty of teaching on Saturday due to late start of the session of the first year. It is expected the beginning of the first-year session will be regular soon. If a situation arises again, it will be discussed with Dean (Faculty Welfare).
Item 4.8	To consider the application, UG Internship Programme (C-25-UIP) regarding CO, CO-PO Mapping for (a) CE-402 Industrial Internship (w.e.f. Academic Year 2023-24) (b) CE-405 Summer Training. CO-PO mapping is approved.
Item 4.9	To consider and adopt a resolution about increasing the allotted seats to Department of Civil Engineering from 116 to 176. Year-wise increase in intake at various levels (UG/PG/PhD) during 2023-24 to 2027-28 was prepared and submitted vide letter No: a/Cs/2022-23/867 dtd: 5/01/2023 **Annexure 8.2.1 of 61st IAAC** and for 2028-29 to 2032-33 **Annexure 8.2.2 of 61st IAAC**, increase in the intake vide no. Acad/577 dated 9/1/2023 in reference to the Ministry of Education Email Subject: Increasing students' intake in IITs/NITs/IIITs dated Jan 3, 2023. In this view, the additional increase in the intake of Civil Engineering from 116 to 176 is taken care of.
Item 4.10	To approve 'change' of a Supervisor. Dr. Tamizharasi G. Assistant Professor, Department of Civil Engineering, SVNIT, Surat would replace Dr. S. R. Suryanwanshi, Assistant Professor, Department of Civil Engineering, SVNIT, Surat for the Ph.D. thesis supervision of Student Mr. Ananda Mitra (DS20CE030). Approved as per Academic Regulation 10.3.1. (a).
Item 4.11	The requests of the following Students for the Ph.D. category conversion from the FIR to PEC.

	Name of Student	Job Joining Date	Name of Supervisor / Co-supervisor
	Arpit A. Parikh (D17AM012)	-	Dr. A.K. Desai
	Shishir Dadhich (DS20CE020)	03/08/22	Dr. C.R. Patel & Dr. R.M. Tailor
	Gaurav Raj (D20CE003)	26/09/22	Dr. Rakesh Kumar
	Nandan H. Dawada (DS17CE010)	07/10/22	Dr. G.J. Joshi & Dr. S.S. Arkatkat
	Approved as per Academic Regulation 11.3 (d)		
Item 4.12	To consider and resolution regarding the name "B. Plan" as query raised by Reso.1 of 51st IAAC meeting held on 12/07/2021 regarding revisit the Nomenclature of B.Plan. Keep the same name as Bachelor of Planning in line with the degrees offered by School of Planning & Architecture. , The proposal for starting B.Plan. is discussed and approved. It is resolved to forward it to the Senate for further approval. The B.Plan. program will be started by the Department of Civil Engineering.		
Item 4.13	To consider and approve the change in course name along with course code for subject having backlog students. The mapping of the subjects is done and it is approved.		
Item 4.14	To consider the recommendation of the DAAC for Dr. Ankesh Kumar as Co-supervisor of three research Scholars of the Department of Civil Engineering. Dr. Ankesh Kumar joining to IIT Palakkad in 1st week of January 2023.		

Students' Name	Reg. No.	Existing Supervisor(s)	Proposed Supervisor(s)
Ms. Kanchan S Patil (PEC)	D21CE021	Dr. Ankesh Kumar	Dr. J.T. Chavda Dr. Ankesh Kumar
Ms. Geetanjali Lohar (FIR)	D20CE024	Dr. Ankesh Kumar Dr. Nishant Roy, BITS, Pilani	HOD, DoCE (Administrative Supervisor) Dr. Ankesh Kumar Dr. Nishant Roy, BITS, Pilani
Mr. Chappidi Srinivas (FIR)	D20CE023	Dr. Ankesh Kumar Dr. Jogender singh, DoCHE, SVNIT	HOD, DoCE (Administrative Supervisor) Dr. Ankesh Kumar Dr. Jogender Singh, DoCHE, SVNIT

	Approved as per Academic Regulation 10.4 (a).
Item 4.15	A request of Mr. Suraj Bhosle (DS17AM010), working under the supervision of Dr. A.K. Desai, for the category conversion from the FIR to PEC. Approved as per Academic Regulation 11.3 (d).
Item 4.16	To approve 'discontinuation' of a Co-supervisor, i.e Dr. Sumit Khare, Assistant Professor, Department of Mechanical Engineering, SVNIT, Surat for the Ph.D. thesis supervision of Mr. Rahul Chaudhary (D21CE005). Currently, the Ph.D. Student is being supervised by Dr. Vishisht Bhaiya Assistant Professor, Department of Civil Engineering, SVNIT, Surat and Dr. Sumit Khare. Approved as per Academic Regulation 10.3.1. (a).
Item 4.17	To discuss and adopt resolutions about 'the proposed revised curricula and PEOs, Pos and PSOs of the 'Two' M. Tech. Programmes of the Department of Electrical Engineering. Head of the Department is advised to modify the PEOs, POs, and PSOs of the 'Two' M. Tech. Programmes of the Department of Electrical Engineering. The syllabus of these M.Tech. programs are approved. The head of the Department presented the PSOs of B.Tech. Electrical Engineering program is also approved. It is resolved to forward the same for senate approval. **Annexure 4.17**
Item 4.18	A request of Mr. Pawar Rahul Baban (D18ME014), working under the supervision of Dr.

	R.V. Rao, for the category conversion from the FIR to PEC. Approved as per Academic Regulation 11.3 (d).
Item 4.19	A request of Mr. Mayank Shah (DS17ME004), working under the supervision of Dr. R.D. Shah, for the category conversion from the FIR to PEC. Approved as per Academic Regulation 11.3 (d).
Item 4.20	To approve the 'addition' of Co-supervisor, i.e., Dr. R.D. Shah, Associate Professor, Department of Mechanical Engg., SVNIT, Surat for the Ph.D. thesis supervision of Student Sunil Jatoliya (D21ME014). Currently, the Ph.D. Student is being supervised by Dr. Nikhil A. Baraiya Assistant Professor, Department of Mechanical Engg., SVNIT, Surat. Approved as per Academic Regulation 10.3.1. (a).
Item 4.21	To discuss replacing the One credit course of "Seminar (ME307)" in the 5th Semester of existing B.Tech. curriculum by a Two credits "Project Preliminary" in the 6th Semester. This will allow a complete two semester project for the B.Tech. students and also reduce the imbalance of total credits between 5th and 6th semesters (both will be of total 25 credits henceforth). The revised curriculum is attached in Annexure 1 along with course code (ME308) for "Project Preliminary", implementation from July 2023. Approved as per DAAC recommendation.
Item 4.22	A request of Mr. Mithun Vasava (DS19EN0014), working under the supervision of Dr. Urvashi Kaushal, for the category conversion from the FIR to PEC. Approved as per Academic Regulation 11.3 (d).
Item 4.23	A request of Mr. Jaydip Chauhan (DS22MA002), working under the supervision of Dr. Ranjan Kumar Jana, for the category conversion from the FIR to FRS. Approved as per Academic Regulation 11.3 (d).
Item 4.24	To consider the recommendations of DAAC, Department of Chemistry regarding the request of Ms. Nilam Gamit (DS18CY005), working under the supervision of Dr. Bharat Dholakiya, for the category conversion from the FIR to PEC. Approved as per Academic Regulation 11.3 (d)
	Any other Item by Chair
Item 4.25	The curriculum structure of the first two years of B.Tech. Electronics and VLSI Engineering is presented by the HoD of the Department of Electronics Engineering as per the NEP curriculum structure format. It is approved for further approval by the Senate. Currently, the intake in B.Tech. Electronics and Communication Engineering is 180. The B.Tech. Electronics and VLSI Engineering program will be started without any additional intake, that is, from academic year 2023-24 the intake of B.Tech. Electronics and Communication Engineering will be 120 and the intake of B.Tech. Electronics and VLSI Engineering will be 60. The curriculum of B.Tech. Electronics and VLSI Engineering is attached in **Annexure 1.2 of 61st IAAC**.
Item 4.26	The head of the department is advised to explore the placement scenarios of the currently running five years integrated M.Sc. in Physics program which will help in starting the new program B.Tech. in Engineering Physics. It is resolved to consider the item for starting the program from the academic year 2024-25.
Item 4.27	The curriculum structure of B.Plan. is presented by the HoD of the Department of Civil Engineering as per the NEP curriculum structure format. It is approved for further approval by the Senate. The curriculum of B.Plan. is attached in **Annexure 1.2 of 61st IAAC**.
Item 4.28	Regarding the starting of Two Centres of Excellence: (i) Robotics and Cyber-Physical Systems and (ii) Computational and Linguistic Intelligence. The proposal is discussed for setting up the centre of excellence in the domain of emerging areas Robotics, Industry automation, the Internet of Things, Sensor Networks, Actuators, Process Automation, Security and Privacy, Cyber system, and their applications in different domains. The departments which are working in these domains will operate this centre and the executive

	body of faculty members consisting of Two professors, Two Associate professors, and Four Assistant professors will be setup for the respective centre. Similarly, in the domain of Computational intelligence for exploring different algorithmic development using Artificial Intelligence and Machine Learning with applications in various domains of Physics, Chemistry, Chemical, Computer Science, and Humanities will be taken care by the centre of excellence in Computational and Linguistic Intelligence. Linguistic intelligence for natural language processing/understanding, machine translation specifically for Indian languages along with behaviour analysis, cognitive science, and social network analysis will be taken care by this centre.
Item 4.29	Year-wise increase in intake at various levels (UG/PG/PhD) during 2023-24 to 2027-28 was prepared and submitted vide letter No: a/Cs/2022-23/867 dtd: 5/01/2023 **Annexure 8.2.1 of 61st IAAC** and for 2028-29 to 2032-33 **Annexure 8.2.2 of 61st IAAC**, increase in the intake vide no. Acad/577 dated 9/1/2023 in reference to the Ministry of Education Email Subject: Increasing students' intake in IITs/NITs/IIITs dated Jan 3, 2023. It is approved and forwarded to the Senate and BoG for approval and necessary notification.
Res. 4	Item 4.1 of the 61st IAAC regarding the curriculum structure and Multiple Entry Multiple Exit (MEME) for implementing the National Education Policy (NEP) 2020 was discussed. It was approved by the Senate. It is decided that 5-10 students from NIT/IIT/IIITs may be allowed as per the MEME policy. The MEME criteria were approved and depicted in **Annexure 1.1 of 61st IAAC**. Time being the implementation of NEP 2020 will be started from the academic year 2023-24 offering the specialization, later the offering of Minors and Honors degrees will be decided in ensuing Senate meetings. The curriculum template is attached in the **Annexure 1.1 of 61st IAAC.** Based on this template, the curriculum schemes designed by various departments for UG programs are approved and listed in **Annexure 1.2 of 61st IAAC** for implementing NEP 2020 from academic year 2023-24. The examination pattern of the subject will be the same as that of existing pattern. The rules and regulations for B.Tech./M.Tech. /Ph.D. will be finalized soon and will be published on the institute website. Item 4.2 regarding the action plan with starting of the program from the next academic year, faculty requirement, student strength, and infrastructure requirement with intake strength of student for each program are discussed and approved for further approval by the finance committee and the detail is attached in **Annexure 2.1 of 61st IAAC** and shall be forwarded for BoG notification of new programs for admissions through JoSAA and CCMT respectively. The programs considered for the next academic year, 2023-24 are as follows: (1) M.Tech. Computer Science and Engineering with Specialization in Information Security and Privacy (2) M.Tech. Computer Science and Engineering with Specialization in Data Science (3) M.Tech. Mechanical Engineering with Specialization in Machine Design (4) B.Tech. Artificial Intelligence and (5) Five years Dual Degree program in Master of Business Administration (B.Tech. + MBA) with an option for an exit after four years with B.Tech. (6) Two years program in Master of Business Administration in Business Analytics. (7) B.Plan. (8) B.Tech. Electronics and VLSI Engineering. Item 4.3 and 4.5 regarding the curriculum structure and syllabus of B.Tech. AI, Five years Dual Degree MBA (5 years) and MBA in Business Analytics (2 years) will be forwarded for further approval of the Finance Committee and BoG Notification. Item 4.4 regarding the curriculum and syllabus of the Dual Degree Programme: Bachelor of Technology and Master of Technology in Mathematics and Computing will be considered for starting from the academic year 2024-25. Item 4.6 regarding to consider a proposal to start a joint Ph.D. Program with Indian Institute of Technology, Mandi, and Indian Institute of Technology, Jammu approved by the Senate.

	Item 4.7 The head of the Chemical Department presented the view that the faculty involved in the first year has to do the duty of teaching on Saturday due to late start of the session of the first year. It is expected the beginning of the first-year session will be regular soon. If a situation arises again, it will be discussed with Dean (Faculty Welfare). Item 4.8 and Items 4.10 to 4.24, 4.26, 4.27 are approved by the senate as per 61st IAAC resolutions. Item 4.9 regarding to consider and adopt a resolution about increasing the allotted seats to Department of Civil Engineering from 116 to 176. Year-wise increase in intake at various levels (UG/PG/PhD) during 2023-24 to 2027-28 was already prepared and submitted vide letter No: a/Cs/2022-23/867 dtd: 5/01/2023 **Annexure 8.2.1 of 61st IAAC** and for 2028-29 to 2032-33 **Annexure 8.2.2 of 61st IAAC.** The request for the increase in the intake was taken care of. The item is approved for further approval of BoG. Item 4.25 regarding the B.Tech. Electronics and VLSI Engineering program will be started without any additional intake, that is, from academic year 2023-24 the intake of B.Tech. Electronics and Communication Engineering will be 120 and the intake of B.Tech. Electronics and VLSI Engineering will be 60. The curriculum of B.Tech. Electronics and VLSI Engineering is attached in **Annexure 1.2 of 61st IAAC**. Item 4.28 The starting of Two Centres of Excellence: (i) Robotics and Cyber-Physical Systems and (ii) Computational and Linguistic Intelligence was discussed and approved in principally by the Senate for further approval of BoG and it may be executed under CIDER. Item 4.29 in connection NEP implementation, the increase in the intake at various programs which was requested by the MoE for the duration 2023 to 2035 and submitted as per **Annexures 8.2.1** and **8.2.2 of 61st IAAC** was approved by the Senate.
	Item from the Chair
Item 5	To consider and adopt resolutions about the 'recommendations' made in the 14th Standing Executive Committee (SEC) meeting of the senate held on March 5, 2023 regarding consideration of submission of 'XX' grade for the B.Tech. 1st year ODD semester 2022-23. Annexure
Reso. 5	In reference to the representation by the B.Tech. I year students regarding awarding of 'XX' grade which is affecting their career the meeting of SEC was held and the following was resolution. The students who not eligible for appearing in the end semester examination of the currently running ODD semester of B.Tech. I year, have to register for the respective subject in which 'XX' grade was awarded in the next even semester, and the students have to attend the classes in either with the regular classes of even semester if the same subject is also offered in the even semester. If subjects are not part of the regular even semester, the evening classes will be conducted. The students have to pay 20% of tuition fees as per Institute norms. The examination of regular subjects will be conducted with end semester exam and for the remaining subjects it will be conducted in the next week after the end semester. The honorarium will be paid to the faculty members for conducting the evening classes as per Institute norms. It is resolved only for B.Tech. 1st year. The senate approved the resolution of 14th SEC of Senate **(Annexure 5)**.

The meeting ended with the thanks to the Chair.

REGISTRAR
SECRETARY- SENATE

DIRECTOR
CHAIRMAN-SENATE

Annexure 2
of the 58th Senate Agenda Item

SARDAR VALLABHBHAI NATIONAL INSTITUTE OF TECHNOLOGY, SURAT

The Actions Taken Report on the minutes of the **57th** meeting of the **Senate** of the Sardar Vallabhbhai National Institute of Technology, Surat held on **Friday, March 10, 2022, 10:00 a.m.** onwards is appended below.

No.	Resolutions		Actions Taken
Res. 1	Resolved that the minutes of the 57th meeting of the Senate held on 10th March, 2023 be confirmed.		Noted.
Res. 2	The "Actions Taken Report" was presented by Dean (Academic). The House noted and approved the actions taken on the 57th meeting of the Senate held on 10th March, 2023.		Noted and the actions initiated.
Res. 3	To consider and adopt resolutions about the 'recommendations' made in the 60th meeting of the Institute Academic Advisory Committee (IAAC) held on January 31, 2023.		
	(a)	Items 3.1 to 3.15 of 60th IAAC was approved by Senate.	Noted.
	(b)	Items 3.16 and 3.17 regarding Dual Degree Programme: Bachelor of Technology and Master of Technology in Mathematics and Computing and B.Tech. (Engg. Phys.) programme for the consideration of the IAAC. It is resolved for considering both these proposal for starting from the academic year 2024-25. HoDs are also advised for exploring the ways for better placement scenarios and improving the rank of admitted students in these programs.	Item is deferred.
	(c)	Item 3.18 regarding the re-structuring of M.Tech. Dissertation Evaluation Committee: For M.Tech. and M.Sc. programs, the Dissertation Evaluation Committee will be re-structured. The evaluation of group of students working in a similar broad area will be carried out by a group of internal examiners consist of minimum three examiners including supervisor. The number of groups of students and examiners will be decided by the HoD based on specialization. There will be no Chairman in Committee and external examiner for evaluation with immediate effect.	Noted and the actions initiated.
	(d)	Item 3.19 It is resolved that Research Progress Committee structure will remain same as per existing, consist of two nominees of examiners one from supervisor and another from DAAC chairman but there will be no Chairman in the Committee with immediate effect. The same committee members will	Noted and the actions initiated.

		evaluate the Credit Seminar of PhD Scholar. The Chairman will be appointed through DAAC chairman for Pre-synopsis and through Dean Academic for Final viva-voce examination of PhD candidate.	
	(e)	Item 3.20 of 60th IAAC was approved by Senate.	Noted.
	(f)	Item 3.21 regarding discussing and adopting the resolution regarding Ph.D. Programme and Admission suggested modifications, for sub-item 6, the resolution in 60th IAAC minutes is discussed and resolved as follows. It is decided to maintain the credit requirement to 16 credits along with the subject "Research Methodology" for every department. Each department shall offer a Research Methodology subject at PG level and the same course may be registered by the PhD student from any department. The 16 credits should be earned within the first two semesters. Four credits should be earned through the subject "Research Methodology". The remaining 12 credits may be earned through (i) three / four theory courses or (ii) two / three theory courses and one credit seminar.	Noted and the actions initiated.
	(g)	Item 3.22 regarding Academic Calendar for academic Year 2023-24 is approved with minor suggestion: the duration for scheduling PhD Research Progress Seminar is extended till the last working day of the week before the beginning of the next semester **(Annexure 14.1).**	Noted and the actions initiated.
	(h)	Item 3.23 to discuss the Minor program running as per NEW education policy NEP 2020 implementation. For better implementation of Minor and Honors programs, it is decided that the Minor and Honors programs from respective department will be executed as per NEW education policy NEP 2020.	Noted.
	(i)	Item 3.24 regarding including the date of convocation in the academic calendar for better planning and execution. After discussion, it is resolved that the convocation shall be scheduled either on 15 September or 31 October.	Noted.
\Res. 4	**To consider and adopt resolutions about the 'recommendations' made in the 61st meeting of the Institute Academic Advisory Committee (IAAC) held on February 28, 2023.**		
	(a)	Item 4.1 of the 61st IAAC regarding the curriculum structure and Multiple Entry Multiple Exit (MEME) for implementing the National Education Policy (NEP) 2020 was discussed. It was approved by the Senate. It is decided that 5-10 students from NIT/IIT/IIITs may be allowed as per the MEME policy. The MEME criteria were approved and depicted in **Annexure 1.1 of 61st IAAC**. Time being	Noted and the actions initiated.

		the implementation of NEP 2020 will be started from the academic year 2023-24 offering the specialization, later the offering of Minors and Honors degrees will be decided in ensuing Senate meetings. The curriculum template is attached in the **Annexure 1.1 of 61st IAAC.** Based on this template, the curriculum schemes designed by various departments for UG programs are approved and listed in **Annexure 1.2 of 61st IAAC** for implementing NEP 2020 from academic year 2023-24. The examination pattern of the subject will be the same as that of existing pattern. The rules and regulations for B.Tech./M.Tech. /Ph.D. will be finalized soon and will be published on the institute website.	
	(b)	Item 4.2 regarding the action plan with starting of the program from the next academic year, faculty requirement, student strength, and infrastructure requirement with intake strength of student for each program are discussed and approved for further approval by the finance committee and the detail is attached in **Annexure 2.1 of 61st IAAC** and shall be forwarded for BoG notification of new programs for admissions through JoSAA and CCMT respectively. The programs considered for the next academic year, 2023-24 are as follows: (1) M.Tech. Computer Science and Engineering with Specialization in Information Security and Privacy (2) M.Tech. Computer Science and Engineering with Specialization in Data Science (3) M.Tech. Mechanical Engineering with Specialization in Machine Design (4) B.Tech. Artificial Intelligence and (5) Five years Dual Degree program in Master of Business Administration (B.Tech. + MBA) with an option for an exit after four years with B.Tech. (6) Two years program in Master of Business Administration in Business Analytics. (7) B.Plan. (8) B.Tech. Electronics and VLSI Engineering.	Noted and the actions initiated. Out of 8 programes, only four programmes are approved by 64th BoG held on 16 March 2023 for starting from academic year 2023-24: (1) M.Tech. Computer Science and Engineering with Specialization in Information Security and Privacy (2) M.Tech. Computer Science and Engineering with Specialization in Data Science (3) B.Tech. Artificial Intelligence and (4) Five years Dual Degree program in Master of Business Administration (B.Tech. + MBA) with an option for an exit after four years with B.Tech. Accordingly JoSAA / CSAB and CCMT seat matrix are prepared.
	(c)	Item 4.3 and 4.5 regarding the curriculum structure and syllabus of B.Tech. AI, Five years Dual Degree MBA (5 years) and MBA in Business Analytics (2 years) will be forwarded for further approval of the Finance Committee and BoG Notification.	Approved by 64th BoG held on 16 March 2023 and implemented.

	(d)	Item 4.4 regarding the curriculum and syllabus of the Dual Degree Programme: Bachelor of Technology and Master of Technology in Mathematics and Computing will be considered for starting from the academic year 2024-25.	Item is deferred.
	(e)	Item 4.6 regarding to consider a proposal to start a joint Ph.D. Program with Indian Institute of Technology, Mandi, and Indian Institute of Technology, Jammu approved by the Senate.	Noted and implemented.
	(f)	Item 4.7 The head of the Chemical Department presented the view that the faculty involved in the first year has to do the duty of teaching on Saturday due to late start of the session of the first year. It is expected the beginning of the first-year session will be regular soon. If a situation arises again, it will be discussed with Dean (Faculty Welfare).	Noted.
	(g)	Item 4.8 and Items 4.10 to 4.24, 4.26, 4.27 are approved by the senate as per 61st IAAC resolutions.	Noted.
	(h)	Item 4.9 regarding to consider and adopt a resolution about increasing the allotted seats to Department of Civil Engineering from 116 to 176. Year-wise increase in intake at various levels (UG/PG/PhD) during 2023-24 to 2027-28 was already prepared and submitted vide letter No: a/Cs/2022-23/867 dtd: 5/01/2023 **Annexure 8.2.1 of 61st IAAC** and for 2028-29 to 2032-33 **Annexure 8.2.2 of 61st IAAC.** The request for the increase in the intake was taken care of. The item is approved for further approval of BoG.	Year wise increase as mentioned in **Annexure 8.2.1 of 61st IAAC** and for 2028-29 to 2032-33 **Annexure 8.2.2 of 61st IAAC** approved by 64th BoG held on 16 March 2023
	(i)	Item 4.25 regarding the B.Tech. Electronics and VLSI Engineering program will be started without any additional intake, that is, from academic year 2023-24 the intake of B.Tech. Electronics and Communication Engineering will be 120 and the intake of B.Tech. Electronics and VLSI Engineering will be 60. The curriculum of B.Tech. Electronics and VLSI Engineering is attached in **Annexure 1.2 of 61st IAAC**.	Item is deferred.
	(j)	Item 4.28 The starting of Two Centres of Excellence: (i) Robotics and Cyber-Physical Systems and (ii) Computational and Linguistic Intelligence was discussed and approved in principally by the Senate for further approval of BoG and it may be executed under CIDER.	Noted.
	(k)	Item 4.29 in connection NEP implementation, the increase in the intake at various programs which was requested by the MoE for the duration 2023 to 2035 and submitted as per **Annexures 8.2.1** and **8.2.2 of 61st IAAC** was approved by the Senate.	Approved by 64th BoG held on 16 March 2023
Res. 5	In reference to the representation by the B.Tech. I year		Noted and the actions

	students regarding awarding of 'XX' grade which is affecting their career the meeting of SEC was held and the following was resolution. The students who not eligible for appearing in the end semester examination of the currently running ODD semester of B.Tech. I year, have to register for the respective subject in which 'XX' grade was awarded in the next even semester, and the students have to attend the classes in either with the regular classes of even semester if the same subject is also offered in the even semester. If subjects are not part of the regular even semester, the evening classes will be conducted. The students have to pay 20% of tuition fees as per Institute norms. The examination of regular subjects will be conducted with end semester exam and for the remaining subjects it will be conducted in the next week after the end semester. The honorarium will be paid to the faculty members for conducting the evening classes as per Institute norms. It is resolved only for B.Tech. 1st year. The senate approved the resolution of 14th SEC of Senate.	initiated. Evening Classes started from March 10, 2023.

सरदार वल्लभभाई राष्ट्रीय प्रौद्योगिकी संस्थान सूरत

Sardar Vallabhbhai National Institute of Technology Surat

Academic Regulations

for

Bachelor of Technology (B.Tech.)

Master of Technology (M.Tech.)

Dual Degree Program (B.Tech. + MBA)

Five Years Integrated M.Sc. Programmes

Master of Technology (Research) (M.Tech. (R))

Doctor of Philosophy (Ph.D.)

Effective from 2023-24 onwards

With NEP 2020 Implementation

Sardar Vallabhbhai National Institute of Technology (SVNIT)

Ichchhanath, Surat 395007, Gujarat, India

https://www.svnit.ac.in

Phone: +91 261 2257571, 2259582 to 84

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2 PREAMBLE

This Institute was established in 1961 as one of the Regional Engineering Colleges (RECs) for imparting technical education in Civil, Mechanical and Electrical Engineering. In the year 1983-84 the Under Graduate programme in Electronics Engineering was introduced and in the year 1988-89 the UG programmes in Computer Engineering and Production Engineering were started. In the year 1995-96, UG programme in Chemical Engineering was introduced. In exercise of the powers conferred by section 3 of the University Grants Commission (UGC) Act, 1956, the Central Government on the advice of the University Grants Commission, has declared the Sardar Vallabhbhai Regional College of Engineering and Technology (SVRCET), Surat to Sardar Vallabhbhai National Institute of Technology (SVNIT), Surat with status of "Deemed University" with effect from 4th December 2002. The Institute has been granted the status of 'Institute of National Importance' with effect from August 15, 2007. SVNIT is governed by NIT Act and NIT Council under Ministry of Education, Government of India. At present, the Institute is offering Seven UG Programmes, Twenty one PG Programmes, Three M.Sc. Five Years Integrated Programmes. One Dual Degree B.Tech. + MBA programme, PG Programmes by Research and Doctoral programmes in different disciplines.

These regulations are preliminary aimed for imparting courses of instructions, conduction of examinations, and evaluating of the performance of students leading to B.Tech. / Dual Degree / M. Tech. / M.Sc. / M.Tech. (Research) / Ph.D. degrees. M.Tech. (Research) courses will be offered to external or internal candidates who are working professionals.

These regulations are effective for the students admitted in the academic year 2023-2024 and onwards. The regulation mentioned herein under is subject to review from time to time and the Senate may rectify/revise some/any/all of these and the revised provision shall be applicable in case of discrepancy.

The procedures and requirements stated in these regulations may be relaxed by the Chairperson of the Institute Senate under extra ordinary circumstances for cogent reasons. The ground on which such waiver/relaxation is granted shall invariably be recorded and cannot be cited as precedence.

2.1 Institute Vision

Sardar Vallabhbhai National Institute of Technology (SVNIT), Surat, perceives to be a globally accepted centre of excellence in technical education catalyzing absorption, innovation, diffusion and transfer of high technologies resulting in enhanced quality for all the stakeholders.

2.2 Institute Mission

The mission of the Sardar Vallabhbhai National Institute of Technology (SVNIT), Surat is to be a leading technical Institute not only at national level but also at international level for imparting training to manpower as per the needs of technology. It is also envisaged to provide the necessary infrastructure to take up research work and to provide the mechanism to interact with industries effectively.

2.3 Departments and UG / PG / M.Sc. / PhD Programmes

The institute has total twelve number of departments, offering Seven under graduate engineering programmes, Twenty one post graduate programmes, Three five years integrated master of science programmes and One dual degree under graduate plus master in business administration programme, Post graduate programmes by research and Doctoral programmes in the respective departments.

2.3.1 Departments

The following are the departments in the Institute offering UG / PG / PhD Programmes.

1. Department of Artificial Intelligence
2. Department of Chemical Engineering
3. Department of Civil Engineering
4. Department of Computer Science and Engineering
5. Department of Electrical Engineering
6. Department of Electronics Engineering
7. Department of Mechanical Engineering
8. Department of Chemistry
9. Department of Mathematics
10. Department of Physics
11. Department of Humanities and Social Sciences
12. Department of Management Studies

2.3.2 Under Graduate Programmes- B.Tech. Programmes

The following full-time B.Tech. degree programmes are being offered in the Institute by the respective departments.

1. B.Tech. Artificial Intelligence
2. B.Tech. Chemical Engineering
3. B.Tech. Civil Engineering
4. B.Tech. Computer Science and Engineering
5. B.Tech. Electrical Engineering
6. B.Tech. Electronics and Communication Engineering
7. B.Tech. Mechanical Engineering

2.3.3 Post Graduate Programmes- M.Tech. Programmes

The following full-time M. Tech. programmes are being offered in the Institute by different departments.

a. Chemical Engineering Department
    1. M.Tech. Chemical Engineering

b. Civil Engineering Department
    2. M.Tech. Construction Technology and Management
    3. M.Tech. Environmental Engineering
    4. M.Tech. Soil Mechanics and Foundation Engineering
    5. M.Tech. Structural Engineering
    6. M.Tech. Transportation Engineering and Planning
    7. M.Tech. Urban Planning

8. M.Tech. Water Resources Engineering

c. Computer Science and Engineering Department

9. M.Tech. Computer Science and Engineering
10. M.Tech. Computer Science and Engineering (Data Science)
11. M.Tech. Computer Science and Engineering (Information Security and Privacy)

d. Electrical Engineering Department

12. M.Tech. Electrical Engineering (Instrumentation and Control)
13. M.Tech. Electrical Engineering (Power Electronics and Electrical Drives)
14. M.Tech. Electrical Engineering (Power Systems)

e. Electronics Engineering Department

15. M.Tech. Electronics Engineering (Communication Systems)
16. M.Tech. Electronics Engineering (VLSI and Embedded Systems)

f. Mechanical Engineering Department:

17. M.Tech. CAD / CAM
18. M.Tech. Manufacturing Engineering
19. M.Tech. Mechanical Engineering
20. M.Tech. Thermal Systems Design
21. M.Tech. Turbo Machines

The above departments are also offering post-graduate programmes by research, namely, M.Tech. (Research) for working professionals.

2.3.4 Master of Science Programmes- Five Years Integrated M.Sc. Programmes

The following full-time five years integrated master of science programmes are being offered in the Institute by the respective departments.

1. M.Sc. Chemistry
2. M.Sc. Mathematics
3. M.Sc. Physics

2.3.5 Dual Degree B.Tech. + MBA Programme

1. There is no direct admission into this programme through JoSAA.
2. The students admitted in different existing B.Tech. (UG) programmes will be studying their three years of respective UG programmes.
3. After the third year of B.Tech., the number of students from these UG programmes will be given a choice to study the next two years in the MBA programme. B.Tech. III-year students will be eligible having CGPA 8.0 or above and the selection will be done based written test/interview.
4. Preferably equal number of students from each UG programmes will be selected for the next two years of MBA study.
5. The intake of this programme is 60.
6. The other guidelines are similar to that of UG programmes.

7. In case, a student who is admitted into this programme willing to discontinue after the fourth year of study, will be awarded the B.Tech. degree in respective UG discipline with a specialization in Business Analytics.

The provision of these Regulations shall be applicable to any new disciplines that will be introduced from time to time. Notwithstanding any of the Clause(s) provided in the Regulations, the Senate shall exercise its powers to change/amend/interpret/implement decisions and actions concerned with academic matters. The Board of Governors of the Institute may, on the recommendation of the Senate, change any or all parts of these Regulations as per the requirement of the Institute.

3 NATIONAL EDUCATION POLICY (NEP) BASED PROGRAMME STRUCTURE

The National Education Policy 2020, lays emphasis on of making the education more holistic and effective by integration of general (academic) and vocational education while ensuring the vertical and horizontal mobility of students and learners between academic and vocational streams. NEP strives to transform India into a vibrant knowledge society to become a global knowledge superpower (vishwa guru).

The National Credit Framework (NCrF) is an inclusive umbrella Framework to seamlessly integrate the credits earned through school education, higher education and vocational and skill education. For creditisation and integration of all learning, the National Credit Framework (NCrF) shall encompass the qualification frameworks for higher education, vocational and skill education and school education, namely National Higher Education Qualification Framework (NHEQF), National Skills Qualification Framework (NSQF) and National School Education Qualification Framework (NSEQF) also popularly known as National Curricular Framework (NCF) respectively. The implementation of NCrF will help in realising the vision and intent of NEP by removing distinction, ensuring flexibility and mobility and establishing academic equivalence between general and vocational education.

The National Credit Framework (NCrF) provides for broad based, multi-disciplinary, holistic education, allowing imaginative and need based curricular structures and enabling creative combinations of subjects and disciplines. The Framework has been built on the strength of existing regulations, guidelines and qualification frameworks of UGC, AICTE, NCVET, NCERT, CBSE and NIOS so that the options for Multiple Entry-Multiple Exit (ME-ME) are accessible and applicable across the higher education, school education and vocational education.

In this connection, the Board of Governors (BoG) and the Senate of the Institute have resolved to implement National Educational Policy (NEP 2020) from the academic year 2023-24, as per the theme of holistic development of the candidate and enabling the learning at anytime, anywhere and any level, and seamless movement across the NITs, and the following multiple entry and multiple exit criteria is implemented.

3.1 Multiple Entry Multiple Exit Criteria

For Multiple Entry Multiple Exit (MEME), at the end of one year study, an equivalent degree can be awarded. The NCrF credit levels for school education are upto level 4, while for higher education from Level 4.5 to level 8 (Under Graduate Levels 4.5, 5.0, 5.5 and 6.0, Post Graduate Levels 6.0, 6.5 and 7.0, and PhD Level 8) and for vocational education and training at level 4.5 to level 8. The description of Programme level, Credit earned at the end of year, Credit points earned and Entry requirement is as under.

3.1.1 MEME Entry Requirement and Exit Equivalence

Multiple Entry and Multiple Exit is based on the Entry requirement criteria and Exit equivalence awarding degree as mentioned in the Table 1. The MEME is enabled for:

(a) The students who are admitted in the first year of UG programme in SVNIT, that is, institute own students based on the Entry-requirement criteria 1 and 2 for an entry at respective programme levels as shown in Table 1.

(b) Inter NITs students - maximum 10 number of students in the respective programme based on Entry-requirement criteria 1, 2, and 3. At present, such seamless movement (Entry) is allowed at UG programmes only at 2nd and 3rd years of UG programmes, that is, programmes level 5 and level 5.5 with No Objection Certificate and Transfer Certificate from the last institute attended. The other procedural details will be published on the institute web site from time to time basis.

(c) Inter NITs students who are admitted under MEME at SVNIT in particular programme level must complete at least one year study for Exit – equivalence degree awarding. During the stay and study of the candidate at SVNIT, he/she must be abided by the rules of the SVNIT institute and has to pay institute fees and fees for hostel accommodation accordingly. The credits earned during this time will be uploaded on the National Academic Depository (NAD) as suggested under Academic Bank of Credits by the Government of India.

(d) Inter NITs students has to appear in the screening process. The screening of the applicant students will be based on branch-specific pre-requisite written test. The syllabus for branch-specific pre-requisite written test shall be published by the respective programme department on the institute website.

(e) The number of student positions available under MEME for entering into respective programme level other than first year level will be decided based on the vacancies and will be advertised in the month of June/July before the beginning of the academic year. The entry to different programme level will be done as mentioned in the following Table 1.

(f) The UG student will be awarded respective degree of B.Tech. / Integrated M.Sc. (i) who has been admitted at SVNIT in the first year through JoSAA /CSAB and passing out final year of respective programme from SVNIT and (ii) Inter-NIT student who study 2nd, 3rd and 4th years or 3rd and 4th of UG programmes at SVNIT.

(g) Validity of the credit earned for UG is 7 years, that is, the maximum duration from entering into program level 4.5 to exit from program level 6.0 is 7 years, after that the credit earned at any level cannot be utilized towards earning UG degree, i.e., B.Tech. degree. Similarly, the validity of the credit earned PG M.Tech. programme is 4 years, that is, the maximum duration from entering the program level 6.5 to exit from program level 7.0 is 4 years, after that the credit earned at any level cannot be utilized towards earning PG degree, i.e., M.Tech. degree. And for Integrated five years M.Sc. programmes, the validity of the credit is 7 years.

Table 1: Program Level, Credit, Exit-Equivalence and Entry-Requirement

UG / PG / PhD	Program Level	Minimum Credit earned	Credit Points earned	Exit - Equivalence for awarding degree	Entry – Requirement (UG 7 years, PG 4 years – Credit Expiry)
UG 1st year	4.5	40	180	UG-Certificate	1. 12th and JEE (through JoSAA)

UG 2nd year	5.0	40	200	UG-Diploma	1. 12th and JEE (through JoSAA) 2. 1st year of UG **OR** UG-Certificate and 1 year of Vocational / Professional experience 3. Screening based on Branch Specific Prerequisite (Written test)
UG 3rd year	5.5	40	220	B.Voc. / B.Sc.	1. 12th and JEE (through JoSAA) 2. 2nd year of UG **OR** UG-Diploma and 1 year of Vocational / Professional experience 3. Screening based on Branch Specific Prerequisite (Written test)
UG 4th year	6.0	40	240	B.Tech.	1. 12th and JEE (through JoSAA) 2. 3rd year of UG **OR** B.Voc. and 1 year of Vocational / Professional experience 3. Screening based on Branch Specific Prerequisite (Written test)
PG 1st year	6.5	40	260	M.Voc.	1. B.Tech. and GATE (through CCMT) 2. B.Tech. and Screening based on Branch Specific Prerequisite (Written test) (through Spot round if seats are vacant)
PG 2nd year	7.0	40	280	M.Tech.	1. B.Tech. and GATE (through CCMT) 2. 1st year of M.Tech. **OR** M.Voc. + 1 year of Vocational / Professional experience 3. Screening based on Branch Specific Prerequisite (Written test)
PhD	8.0	40	320	Ph.D.	As per Institute Ph.D. Admission Criteria mentioned in respective section

The credit points earned at any progamme level is programme level times the number of credits earned. That is, after UG 1st year, the student will earn 4.5 (programme level) x 40 (number of credits earned) = 180 credit points. For any year / programme level minimum 40 credits must be earned by the student.

If student joins the respective programme level after one year of field experience, the total credit points earned through experience will be 1.33 times credit point earned at pervious programme level. A student who wants to enter second year of UG with a field experience of one year after the completion of first year of UG, has earned the credit points 180 x 1.33 = 240 instead of 180.

3.1.1.1 Exit Equivalence award under various UG / PG Programmes

Department programme wise exit equivalence offered at the end of each year study if the student opts for an exit is mentioned in Table 2.

Table 2: Exit - Equivalence for awarding degree Exit - Equivalence for awarding degree

Department / Program	Year	Exit - Equivalence for awarding degree
Chemical Engineering	II	UG-Diploma in Chemical Engineering
	III	B.Voc. in Chemical Engineering
	IV	B.Tech. in Chemical Engineering
Civil Engineering	I	UG–Certificate 1. Surveyor (vocational training or professional experience in the field of topographic surveys) 2. Site Supervisor (vocational training or professional experience in the field of construction of buildings / bridges / storage structures)
	II	UG-Diploma in Civil Engineering
	III	B. Voc. In Civil Engineering
	IV	B. Tech. in Civil Engineering
Computer Science and Engineering	I	UG-Certificate in Programming Skills
	II	UG-Diploma in Computer Science and Engineering
	III	B.Sc. in Computer Science and Engineering
	IV	B.Tech. in Computer Science and Engineering
Electrical Engineering	I	UG-Certificate in Electrical Engineering
	II	UG-Diploma in Electrical Engineering
	III	B. Voc. in Electrical Engineering
	IV	B.Tech. in Electrical Engineering
Mechanical Engineering	I	UG-Certificate course in Mechanical Engineering
	II	UG-Diploma in Mechanical Engineering
	III	B. Voc. in Mechanical Engineering
	IV	B. Tech. in Mechanical Engineering
Electronics Engineering	I	UG-Certificate in Basic Electronics
	II	UG-Diploma in Electronics and Communication Engineering
	III	B.Voc. in Electronics and Communication Engineering
	IV	B.Tech. in Electronics and Communication Engineering
Artificial Intelligence	I	UG-Certificate in Programming Skills
	II	UG-Certificate in Basic Aptitude in Computer Science and Engineering
	III	B.Sc. in Artificial Intelligence
	IV	B.Tech. in Artificial Intelligence
Mathematics	I	UG-Certificate in Basic Course of Mathematical Sciences and Computer Programming
	II	UG-Diploma in Mathematical Sciences and Computer Programming
	III	B.Sc. in Mathematics
	IV	B.Sc. Honors in Mathematics
	V	M.Sc.-Five Years Integrated M.Sc. Mathematics
Physics	III	B.Sc. in Physics
	IV	B.Sc. Honors in Physics
	V	M.Sc.-Five Years Integrated M.Sc. Physics
Chemistry	I	UG-Certificate in Chemical Sciences
	II	UG-Diploma in Chemical Sciences
	III	B.Sc. in Chemistry
	IV	B.Sc. Honours. in Chemistry
	V	M. Sc. - Five Years Integrated M.Sc. Chemistry

3.1.2 Curriculum Structure for NEP implementation

The following curriculum structure in general is adopted by the institute for implementing NEP 2020 across the departments. The structure is Choice Based Credit System (CBCS). The curriculum structure shown here is a general guideline, the department may offer the subjects as per their need with a particular scheme of Theory (L)-Tutorial (T)-Practical (P).

3.1.2.1 Assignment of Credits as per National Credit Framework

As per National Credit Framework (NCrF) the credit calculation is as below:

1. 1200 Notional learning hours and 40 Credits can be earned in a year, through two semesters.
2. Each semester consists of 600 Notional learning hours leads to minimum 20 number of Credits. These credits may be earned through minimum five number of subjects.
3. Duration of a semester is of 17 weeks, i.e., 85 working days: 15 weeks of teaching and 2 weeks for examination.
4. NCrF based credit assignment for the course:
    a. 1 Credit equivalent to 15 notional learning hours of theory / tutorial
    b. 1 Credit equivalent to 30 notional learning hours of workshop / lab work
    c. 1 Credit equivalent to 40 notional learning hours of vocational training or professional-level learning (experiential learning)
5. Subject with L-T-P (15 weeks of academic teaching + 2 weeks for examination)
    a. Lecture (L) /Tutorial (T): One lecture/tutorial hour per week is assigned one credit.
    b. Practical (P): One laboratory hour per week is assigned half credit.
    c. L-T-P 3-0-2: 15 x 3 = 45 Theory, 15 x 2 = 30 Lab hours: 75 academic teaching hours
    d. L-T-P 3-1-0: 15 x 4 = 60 Theory / Tutorial hours: 60 academic teaching hours
    e. L-T-P 3-1-2: 15 x 4 = 60 Theory / Tutorial hours, 15 x 2 = 30 Lab hours: 90 academic teaching hours
    f. 10 Notional hours for examination includes Mid Semester Examination, Continuous Evaluation (assignment / quiz / practical / tutorial / mini-project etc.), and End Semester Examination.
    g. Notional hour of learning for 3-1-2 scheme: 100, 3-0-2 scheme: 85, 3-1-0 scheme: 70, 3-0-0 scheme: 55.
    h. On average 80 notional hours of learning per subject (academic teaching + examination hours).
    i. Minimum Five subjects per semester results in to 400 notional hours of learning.
6. Vocational training / Experiential learning duration is of 8-10 hours per week for 20 weeks duration leads to 160-200 notional hours of learning.
7. Eighth semester Industrial training / Internship is mandatory which is of 20 weeks duration leads to 800 notional hours of learning (20 x 8 hours x 5 days per week).
8. Additional 200 hours of learning through one vocational training or professional level (experiential learning) – skilling results in earning of 5 Credits.
9. Vocational training or Professional level learning (experiential learning) should be evaluated by the respective department through appropriate examination for awarding the credits.

10. It leads a total 600 Notional learning hours per semester with 25 Credits including vocational training / professional level learning (experiential learning).

3.1.3 Curriculum Structure of UG Programme

For B.Tech. programme, the total number of credits ranges between 160-170 excluding the credits earned through vocational training / professional level learning (experiential learning). The general structure of the curriculum is minimum five subjects in each semester which results into minimum 20 credits per semester. Thus, the total credits till seven semesters are 140 credits or above. The eight semester is of 20 credits, results into a minimum 160 credits for a UG programme.

1. In a B.Tech. programme, through a set of elective subjects, a specialization track can be pursued by the student. In the curriculum structure it is mentioned as "Specialization".
2. For B.Tech. Minor and Honor, the student has to earn an additional 16-20 credits from 4th semester to 7th semester through 4 or 5 subjects. In this case, minimum number of credits earned by the student opting for the Minor or Honor is 176-180 credits or above without vocational training or professional experience.
3. Vocational training / Professional level learning (Experiential learning) is mandatory for the Exit.
4. For seamless student's movement among higher educational institutes, a possible curriculum structure is described in Table 3, maintaining the percentage contribution of subjects from all disciplines.
5. The subjects can be categorized into
    a. Mandatory Core Subjects
    b. Optional Core Subjects
    c. Other Discipline Subjects (Science, Humanities, Other Engineering disciplines)
    d. Elective Subjects, Specialization Subjects, Minor and Honors Subjects
6. Inclusion of Vocational training and Professional level experience (internship, relevant experience).
7. Subject Code: ##nXX; ##: Department Identity, n: Year, XX: Subject Sequence number XX: last digit 0 (subject offered in both ODD and EVEN semesters, XX: 01 to 30 – last digit ODD and EVEN for ODD and EVEN semesters (Mandatory Core), XX: 31 to 50 (Optional Core), XX: 51 to 99 (Elective), Subjects list for Minor and Honor (M/H#1-4), Subjects list for Specialization track (#1-4) EG: Engineering Subject, SC: Science Subject (offered combinedly by departments)
8. The vocation training / professional level experience which is optional but mandatory for Exit is identified by ##V0n / ##P0n where 'V' for Vocational training and 'P' for Professional level experience and 'n' is a semester number.
9. For final year Industrial Internship / Professional Level Experience is mandatory and the code is ##P0n.
10. Proposed / Recommended Curriculum Structure for UG level programme presented here is considered as reference for introducing new UG/PG programme in the institute.

3.1.3.1 Specialization Track, Minor and Honor Programmes

Departments offer various specialization tracks, Minor 'and Honor programmes. The curriculum structure provides the provision for enhancing the technical knowledge through

1. selecting a particular “Specialization track” by studying subjects of specialization in the form of elective subjects; “Specialization#1” to “Specialization#4 in semesters 5, 6, and 7. The number of subjects required for a specialization track may vary and the department academic advisory committee (DAAC) recommends the specialization tracks for an approval of the Senate through the institute academic advisory committee (IAAC).
2. B.Tech. Minor (M) and Honor (H) programmes by earning extra credits 16-20 through subjects “(M/H#1)” to “(M/H#4)” in semesters 4 to 7. The number of subjects required for a particular Minor or Honor may vary and the department DAAC recommends such Minor or Honor programmes for an approval of the Senate through IAAC.
3. If student successfully completes (i) Specialization track, (ii) Minor, or (iii) Honor, the UG degree will be awarded accordingly.
4. At present the specialization and Honor will be offered by the respective departments to the students of own disciplines where the Minor will be offered to the students of other departments. In future, the same specialization track, Minor and Honor programmes may be offered across the departments.
5. There shall be one division for a particular Minor or Honor programme with minimum of 15 students and maximum number of 75 students. The selection of students for specialization track, Minor or Honor programmes is based on CGPA upto 3rd semester as a merit criteria without any backlog and ‘XX’ grade.
6. For the students who are opting for specialization track and Minor/Honor programmes, the CGPA of 7.0 should be maintained in the subjects of the respective specialization track or Minor/Honor program and there should not be ‘XX’ grade in any subject otherwise specialization track and Minor/Honor will not be awarded.

Table 3: Reference Curriculum Structure

Subjects	Proposed / Recommended subject	Code	Scheme L-T-P	Credits (Min.)	Notional hours of Learning (Approx.)
First Semester (1st year of UG)					
CBCS-1	Mandatory Core	##nXX	3-1-2 / 3-1-0 / 3-0-2 / 3-0-0	5 / 4 / 3	100 / 85 / 70 / 55
CBCS-2	Other Engineering	##nXX			
CBCS-3	Science	##nXX			
CBCS-4	Mathematics	##nXX			
CBCS-5	Humanities	##nXX			
Vocational Training / Professional Experience	(Optional) (Mandatory for Exit)	##V0n / ##P0n	0-0-8/10	4/5	160/200 (20 x 8/10)
			Total		
	Minimum Credit Requirement			20	600
Second Semester (1st year of UG)					
CBCS-1	Mandatory Core	##nXX	3-1-2 / 3-0-2 / 3-1-0	4	100 / 85 / 70
CBCS-2	Other Engineering	##nXX	3-1-2 / 3-0-2 / 3-1-0	4	100 / 85 / 70
CBCS-3	Other Engineering/ Science	##nXX	3-1-2 / 3-0-2 / 3-1-0	4	100 / 85 / 70
CBCS-4	Mathematics	##nXX	3-1-2 / 3-0-2 / 3-1-0	4	100 / 85 / 70
CBCS-5	Humanities	##nXX	3-1-2 / 3-0-2 / 3-1-0	4	100 / 85 / 70
Vocational Training /	(Optional) (Mandatory for Exit)	##V0n / ##P0n	0-0-8/10	4/5	160/200 (20 x 8/10)

Professional Experience					
			Total		
	Minimum Credit Requirement			20	600
				40	**1200**
Third Semester (2nd year of UG)					
CBCS-1	Mandatory Core	##nXX	3-1-2 / 3-0-2 / 3-1-0	4	100 / 85 / 70
CBCS-2	Mandatory Core	##nXX	3-1-2 / 3-0-2 / 3-1-0	4	100 / 85 / 70
CBCS-3	Optional Core	##nXX	3-1-2 / 3-0-2 / 3-1-0	4	100 / 85 / 70
CBCS-4	Elective	##nXX	3-1-2 / 3-0-2 / 3-1-0	4	100 / 85 / 70
CBCS-5	Other Engineering / Mathematics / Humanities	##nXX	3-1-2 / 3-0-2 / 3-1-0	4	100 / 85 / 70
			Total		
	Minimum Credit Requirement			20	600
Fourth Semester (2nd year of UG)					
CBCS-1	Mandatory Core	##nXX	3-1-2 / 3-0-2 / 3-1-0	4	100 / 85 / 70
CBCS-2	Mandatory Core	##nXX	3-1-2 / 3-0-2 / 3-1-0	4	100 / 85 / 70
CBCS-3	Optional Core	##nXX	3-1-2 / 3-0-2 / 3-1-0	4	100 / 85 / 70
CBCS-4	Elective	##nXX	3-1-2 / 3-0-2 / 3-1-0	4	100 / 85 / 70
CBCS-5	Other Engineering/ Humanities	##nXX	3-1-2 / 3-0-2 / 3-1-0	4	100 / 85 / 70
(M/H#1)	Minor / Honor	##nXX	3-1-2 / 3-0-2 / 3-1-0	4	100 / 85 / 70
Vocational Training / Professional Experience	(Optional) (Mandatory for Exit)	##V0n / ##P0n	0-0-8/10	4/5	160/200 (20 x 8/10)
			Total		
	Minimum Credit Requirement			20	600
				40	**1200**
Fifth Semester (3rd year of UG)					
CBCS-1	Mandatory Core	##nXX	3-1-2 / 3-0-2 / 3-1-0	4	100 / 85 / 70
CBCS-2	Mandatory Core	##nXX	3-1-2 / 3-0-2 / 3-1-0	4	100 / 85 / 70
CBCS-3	Optional Core	##nXX	3-1-2 / 3-0-2 / 3-1-0	4	100 / 85 / 70
CBCS-4	Elective	##nXX	3-1-2 / 3-0-2 / 3-1-0	4	100 / 85 / 70
CBCS-5	Elective (Specialization#1)	##nXX	3-1-2 / 3-0-2 / 3-1-0	4	100 / 85 / 70
(M/H#2)	Minor / Honor	##nXX	3-1-2 / 3-0-2 / 3-1-0	4	100 / 85 / 70
			Total		
	Minimum Credit Requirement			20	600
Sixth Semester (3rd year of UG)					
CBCS-1	Mandatory Core	##nXX	3-1-2 / 3-0-2 / 3-1-0	4	100 / 85 / 70
CBCS-2	Mandatory Core	##nXX	3-1-2 / 3-0-2 / 3-1-0	4	100 / 85 / 70
CBCS-3	Optional Core	##nXX	3-1-2 / 3-0-2 / 3-1-0	4	100 / 85 / 70
CBCS-4	Elective	##nXX	3-1-2 / 3-0-2 / 3-1-0	4	100 / 85 / 70
CBCS-5	Elective (Specialization#2)	##nXX	3-1-2 / 3-0-2 / 3-1-0	4	100 / 85 / 70
(M/H#3)	Minor / Honor	##nXX	3-1-2 / 3-0-2 / 3-1-0	4	100 / 85 / 70
Vocational Training / Professional Experience	(Optional) (Mandatory for Exit)	##V0n / ##P0n	0-0-8/10	4/5	160/200 (20 x 8/10)
			Total		
	Minimum Credit Requirement			20	600

				40	**1200**
Seventh Semester (4th year of UG)					
CBCS-1	Mandatory Core	##nXX	3-1-2 / 3-0-2 / 3-1-0	4	100 / 85 / 70
CBCS-2	Elective	##nXX	3-1-2 / 3-0-2 / 3-1-0	4	100 / 85 / 70
CBCS-3	Elective	##nXX	3-1-2 / 3-0-2 / 3-1-0	4	100 / 85 / 70
CBCS-4	Elective (Specialization#3)	##nXX	3-1-2 / 3-0-2 / 3-1-0	4	100 / 85 / 70
CBCS-5	Elective (Specialization#4)	##nXX	3-1-2 / 3-0-2 / 3-1-0	4	100 / 85 / 70
(M/H#4)	Minor / Honor	##nXX	3-1-2 / 3-0-2 / 3-1-0	4	100 / 85 / 70
			Total		
			Minimum Credit Requirement	20	600
Eighth Semester (4th year of UG)					
Industrial Internship / Professional Experience	Mandatory	##P0n	0-0-40	20	800 (20 x 40)
			Total		
			Minimum Credit Requirement	20	800
				40	**1200**

(M/H# represent the minor or honor subject)

4 ADMISSION

Admission to all the programmes will be made at the beginning of each academic year at the first-year level as per the guidelines prescribed by the Ministry of Education (MoE), Government of India (GOI) from time to time.

All students, on admission, shall be required to pay prevalent tuition fees and other fees as prescribed from time to time for every semester till they are on the roll list of the Institute.

The Institute reserves the right to cancel the admission of any student and ask the student to discontinue studies at any stage on the grounds of unsatisfactory academic performance, irregular attendance in the classes or indiscipline, act of misconduct, or criminal activities.

The admission work shall be handled by the Admission Committee which is constituted by the Director of the institute consisting of the Chairperson, other members on the recommendation of the Chairperson from the institute and the Deputy Registrar (Academics) as the Secretary.

4.1 B.Tech. and M.Sc. Admission

At present, the admission to B.Tech. and M.Sc. programmes are done through Joint Seat Allocation Authority (JoSAA) https://josaa.nic.in/ and Central Seat Allocation Board (CSAB) which have been set up by the Ministry of Education [erstwhile Ministry of Human Resources Development (MHRD)] to manage and regulate the joint seat allocation for admissions to different institutes including 23 IITs, 31 NITs, IIEST Shibpur, 26 IIITs and 33 Other-Government Funded Technical Institutes (Other-GFTIs). Admission to all the academic programs offered by these Institutes will be made through a single platform.

4.2 M.Tech. Admission

The admission to M.Tech. programme for **NON-SPONSORED CANDIDATES** (WITH GATE SCORE) for General / OBC / Reserved SC / ST categories, is handled by the Centralized Counseling for M.Tech./M.Plan. (CCMT) admissions https://ccmt.admissions.nic.in which is a platform for admissions to different institutes including all NITs, IIEST Shibpur, some IIITs & GFTIs. The

eligibility requirements are as per the CCMT rules applicable from time to time. The seat will be allotted based on merit of GATE Score and preference of specialization given by the candidates.

1. In case, sufficient GATE qualified candidates for General, OBC and SC/ST Category are not available in a particular discipline (after the CCMT spot admissions), the admission to the vacant seats will be offered to the non-sponsored candidates. Except the requirement of GATE score, the eligibility requirements are as per the CCMT rules.

   The merit list will be prepared by giving 50% weightage to aggregate marks of B.E./B.Tech./equivalent degree and 50% weightage to Institute's test/interview for all candidates who have applied and qualified for that particular discipline.

2. In case of the result of qualifying degree is awaited, provisional admission is permitted to a student subject to meeting the eligibility requirements of CCMT latest by 15th September of the academic year of admission (as per CCMT rules). Non-submission of certificates with in due date will lead to automatic cancellation of admission from the institute.
3. The candidates would be required to deposit the fee within the prescribed time after their selection through the counseling process.
4. **SPONSORED CANDIDATES**: In the case of sponsored candidates also, except the requirement of GATE score, the eligibility requirements are as per the CCMT rules. The admission will be given based on common merit list prepared as per following criteria for each basic discipline offering PG courses:
   (a) 50% weightage to Aggregate Marks of B.E./B.Tech. or Equivalent degree.
   (b) 50% weightage to Institute test/interview.
   (c) Admission will be given only to those eligible students who possess their final results at the time of interview/test.
5. The sponsored candidates must have minimum of one year of full-time work experience in the sponsoring organization after attaining the relevant first degree and must be on pay-roll of the present employer. In addition to the other required documents: the experience certificate from their employer and Form 16A or salary slips of last one year from the sponsoring organization along with sponsorship letter and no objection certificate must be provided with an application and presented at time of counselling process.

4.3 Dual Degree B.Tech. + MBA Admission

The intake for this programme is 60 and the students are not admitted directory through JoSAA/CSAB. The students admitted in different existing B.Tech. (UG) programmes will be studying their three years of respective UG programmes, after the third year, the number of students from these UG programmes will be given a choice to study the next two years in MBA programme. B.Tech. III-year students will be eligible having CGPA 8.0 or above and the selection will be done based written test/interview. Preferably equal number of students from each UG programmes will be selected for the next two years of MBA study. The number of students selected for this shall not exceed the intake strength. The other guidelines are similar to that of UG programmes.

The student who has been selected for the next two years of MBA study, may opt for exit after one year of MBA study. In this case the student is completing his/her four years of study, he/she shall be awarded B.Tech. degree in the same programme he/she was admitted with specialization in Business Analytics.

Students who have registered in specialization track or Minor or Honor programmes will not be considered for registering Dual Degree B.Tech. + MBA programme.

4.4 M.Tech. (Research) Admission

The admission to M.Tech. (Research) programmes in different disciplines is performed twice in a year, i.e. Spring Semester (January) and Autumn Semester (July). The schedule for interviews of applicants will be notified separately on institute website in the month of October/November and May/June every year.

(a) The application form available on the institute web site https://www.svnit.ac.in.

(b) The original documents are to be shown at the time of counselling/reporting for interview. In the absence of these documents, candidates will not be interviewed.

(c) The Senate shall approve the schedule of academic activities for the M. Tech (Research) Programme including the date of registration.

(d) The students admitted to M.Tech. (Research) programme are eligible for hostel accommodation during contact period.

4.4.1 Eligibility Criteria

1. A candidate should possess B. E./B. Tech. degree in relevant branch and should have passed with 55% aggregate marks of all 8 Semesters (CGPA-6.0). The candidates should bring valid identity proof at the time of interview.
2. The candidates should have minimum working experience of FIVE years after graduation. However, Institute research project staff should have minimum One years of Experience after graduation.
3. Selection will be based on oral presentation on the proposed area of research in front of a committee duly constituted by DAAC. The chosen supervisor should either be part of interview committee or be invitee member.
4. The candidates for M Tech. (Research) can be
    a. Candidates employed by Government / Semi-Government organizations.
    b. Sponsored candidates.
    c. Institute Staff and Project Staff of the Institute.
    d. Faculty, Staff and Project Staff of the other Institute approved by AICTE /UGC.
    e. External candidates from any private / public sector organization or research laboratory / organization.

    Notes:

    (i) There will be no financial support from SVNIT.

    (ii) Faculty/Staff, Project Staff of this or other institute are expected to work for their M.Tech. (Research) Programme while fulfilling their normal duties.

    (iii) External candidates are allowed to carry out their Research work at the Institute or at their parent organization after fulfilling certain pre-requisites at the Institute.
5. The candidate must enclose self-attested copies of the following documents/certificates. Same must be produced in original at the time of interview/physical documents verification.
    a. Appointment letter issued by the current employer.
    b. Experience certificate duly signed by competent authority on the letter head of the Company/Organization/Institute.

c. Salary certificates/slips of last 12 months.

d. Income-Tax return or Form-16 of last financial year, and

e. All other documents like Date of Birth and Identity Proofs, all semester marksheets, Degree certificates, sponsorship or no objection certificate.

Note:

1. Sponsorship Certificate Should be from the same organization who has issued the Appointment letter, Experience certificate and Salary slip.
2. Salary Slip, Experience Certificate of one year must be from same (single) organization.

6. The candidates would be required to deposit the fee within prescribed time.
7. The candidates must submit "NO OBJECTION CERTIFICATE" from their employers for taking up their M Tech (Research) work at this institute as per format prescribed in the application form. In case the candidates are not able to submit "NO OBJECTION CERTIFICATE" from their employer with the application form, they must submit undertaking that "NO OBJECTION CERTIFICATE" will be presented at the time of interview process otherwise they will not be allowed to appear in the interview process. The applications without such certificates will not be considered for further process of admission.

4.4.2 Application Form and Counselling Procedure

(i) The applicants for M. Tech. (Research) are required to apply by downloading the application form from institute website along with requisite fee.

(ii) M. Tech. (Research) candidates are required to report to the respective departments for written test followed by interview on the date of counselling as per time schedule to be displayed by the departments.

(iii) The candidates are required to attach and bring all the certificates related to educational qualification, experience, birth and sponsorship certificates. In absence of these certificates, it will not possible to conduct the counselling/interview of the candidate. The desired certificates are to be brought strictly in the format described in relevant appendices of the information brochure.

4.5 Ph.D. Admission

The admission to Ph.D. programmes in different disciplines is performed twice in a year. Applications will be processed twice in a year, i.e. Spring Semester (January) and Autumn Semester (July). The schedule for interviews of applicants will be notified separately on institute website in the month of October/November and May/June every year. The Ph.D. application portal link is https://mis.svnit.ac.in/svphd.

The department will publish the criteria for the selection process on the institute website along with the list of eligible candidates called for the admission process. The selection committee for the Ph.D. admission process including interviews will comprise all eligible Ph.D. supervisors of the concerned department.

4.5.1 Category of PhD students

There shall be provision for two categories of registration to the candidates willing to register for Ph.D Programmmes (i) Candidates availing the scholarship/stipend from institute fund, sponsored research project fund or QIP scholarship and (ii) Candidates not availing the scholarship/stipend from institute fund, sponsored research project fund or QIP scholarship.

The status of the candidates admitted to the Ph.D. Programme shall be further classified under any one of the following sub-categories:

- QIP Candidate: Full time **QIP** Research Scholar candidate sponsored under Quality Improvement Programme by Government/Sem-Government organizations/institutes who are admitted through QIP admission will receive their **stipend and contingency grants as per QIP guidelines** issued by MoE. QIP candidate has to perform teaching assistantship as per QIP guidelines.
- FIR Candidate: **Full time Institute Research Scholar** candidate must be **GATE/NET** qualified once at the time of admission and will receive their **stipend and contingency grants as per MoE guidelines** for a duration of four years and extended to fifth year based on performance review. FIR candidate has to perform teaching assistantship as per MoE guidelines.
- FPS Candidate: **Full time Project Staff** candidate will receive the **stipend and contingency grants from the sponsored research project funds** received from agencies like CSIR/SERB/DST/MeitY etc. FPS candidate has to work as project fellow while pursuing the doctoral study.
- ERS Candidate: **External Research Scholar** candidates are self-sponsored or sponsored by Government / Sem-Government / Non-Government / Private organizations/institutes on full-time or part-time basis who are **not entitled for any scholarship / stipend or contingency grants from the institute or sponsored research project funds sanctioned to the institute**. Candidates who are full-time self-sponsored or full-time sponsored on study leave by the Government / Sem-Government / Non-Government / Private organizations/institutes are expected to work full-time and are subject to the rules of the Institute. SVNIT institute own staff / faculty members who wants to pursue Ph.D. can apply under this category.

Note:

i. FIR or FPS candidates if he/she have been serving at the time applying for Ph.D. admission must submit the undertaking stating that if selected, will submit the relieving letter from the existing organization / institute at the time of joining the Ph.D. programme.

ii. ERS candidates are allowed to carry out their research work at the Institute or at their parent organization after fulfilling certain pre-requisites at the Institute.

iii. ERS candidates for Ph.D. must enclose self-attested copies of the following documents/certificates, if serving. Same must be produced in original at the time of interview/physical documents verification.

   a. Appointment letter issued by the current employer.
   b. Experience certificate duly signed by competent authority on the letter head of the Company/Organization/Institute.
   c. Salary certificates/slips of last 12 months.
   d. Income-Tax return or Form-16 of last financial year.
   e. All other documents like Date of Birth and Identity Proofs, all semester marksheets, degree certificates, sponsorship or no objection certificate.

Note:

1. Sponsorship Certificate should be from the same organization who has issued the Appointment letter, Experience certificate and Salary slip.

2. Salary Slip, Experience Certificate of one year must be from same (single) organization.

4.5.2 Eligibility for Admission

The eligibility criteria for admission to Ph.D. in Engineering Faculty, Science Faculty, Humanities and Social Science Faculty, Management Faculty and Interdisciplinary areas are:

1. A candidate shall possess Master's Degree in relevant area of research and should have passed with minimum 60% marks (CGPA 6.0) or equivalent in respective faculty for open / open-EWS / OBC candidates whereas 55% marks (CGPA 5.5) in the case of SC/ ST/ PwD candidates. Full time Institute Research scholars (FIR) taking admission in PhD Programs in Engineering, Sciences, English and Management should have qualified GATE/NET/CAT Examinations, at least once, in his/her academic career.
2. The final selection of the candidate for the doctoral programs under all categories will be strictly subjected to the performance of the candidate in the selection process.
3. The selection process consists of a written test/presentation/interview before the respective selection committees of the department.
4. The written test may be conducted at the discretion of the department for the initial screening of the candidates for allowing them to appear in presentation/interview. In case of written test, the question paper format and topics for the test will be decided by the concerned department. The cut-off criteria in a written test will be at the discretion of the department.
5. The mode of selection process will be announced by the respective department at the time of publishing the list of candidates called for the selection process on the institute web site.
6. The candidate must complete his/her Ph.D. programmes within 3 -7 years.
7. If a student of full-time M. Tech. program from SVNIT wishes to pursue a Ph.D. programme of the Institute, he/she may be permitted to do so from the beginning of the second year provided:

   He/She has obtained a CGPA of 8.0 or above after having registered for the full credits of course work in each of the first and second semesters of M. Tech. Program.

   (a) Once a student changes to Ph.D. Programme, thereafter, he/she is governed by the Regulations of the Ph.D. Programme of the Institute.

   (b) The candidate may be asked to earn minimum 20 credits additionally through course work as per the requirement of the doctoral program and after successful completion of the requirement of Ph.D., he/she should be given a dual M.Tech. and Ph.D. degrees.
8. Candidate who has qualified for the award of Bachelor's degree in Engineering / Technology from an Institute of National Importance including Centrally funded technical institutions of repute / State Government funded institutes with exceptionally good academic record in prescribed discipline will also be considered for direct admission to Ph.D. Programme subject to the following conditions:

   (i) The candidate should have 8.00 CGPA on 10-point scale in his/her B.E./B.Tech. Programme. If the degree is based on percentage aggregate marks, it will be converted into CGPA as per the rule of this institute.

   (ii) The candidate should have a valid GATE score.

   (iii) The final selection will be through the selection process described in this section above.

(iv) The candidate should earn 40 credits within the first TWO semesters of his/her program through the theory/practical coursework after joining the program.

The Senate shall approve the schedule of academic activities for the Research Programme including the date of registration.

5 ACADEMIC CALENDAR

The academic year is divided into two semesters each of approximately seventeen weeks duration, Odd Semester (July-December) and Even Semester (January-June). Before the starting of any academic year, Senate will decide and declare complete academic calendar for the year, such as the date of registration for odd and even semesters, mid-semester and semester-end examinations, inter-semester breaks, etc. The academic calendar shall provide for a total of 85 (Eighty Five) days in each semester.

6 COURSE STRUCTURE

The common course structural guidelines for B.Tech. / M.Tech. / M.Sc. (UG and PG) programmes are:

1. Medium of instruction and examination will be English.
2. Teaching scheme of a subject in general may have Lecture (L), Tutorial (T), and Practical (P) components. The practical may be in the form of Laboratory/Design/Drawing/Workshop. These components may vary subject wise.
3. Any revision of syllabi and changes in courses and curricula proposed by the DAAC and recommended by the IAAC shall have to be placed before the Senate for its approval. However, any changes in curricula which is common for all programmes shall be proposed by the IAAC for approval of the Senate.
4. Each course has a certain number of credits, which reflect its weightage. One Lecture/Tutorial (L/T) hour per week is assigned one credit. One Practical (P) (Laboratory/ Design/Drawing/Workshop) hour per week is assigned half credit. For Seminar and Project, one hour per week per semester is assigned half credit.

6.1 B.Tech. Course Structure

1. The normal duration of the course leading to B. Tech. degree will be eight semesters or four years.
2. Earned credit requirements for the 4-year B. Tech. programmes shall be in the range of 160-170. Exact requirements for individual programme shall be based on the teaching scheme of the Programme.
3. The curriculum of individual programme may include vocational training / professional level experiential learning / field experience / industrial internship for 20 weeks. Such training / experience work is to be satisfactorily completed before a student is declared eligible for the degree. For semesters 1 to 7, such training / experience work may be online / offline mode and may be done during other than regular course hours. For 8th semester such training/ experience work may be online / offline full-time during complete semester.

6.1.1 Maximum Duration for B.Tech. Programme Completion

Normally a student will complete all the requirements for any UG programmes in eight semesters (four years).

1. Academically weak students who are unable to pass in some courses and have to repeat them in subsequent semesters or register for lesser number of courses in a semester of their own or as per the advice of the Academic Performance Review Committee (APRC), shall be

permitted to complete all the requirements of the degree in a maximum period of seven years.

2. If a student is granted withdrawal for one or more semesters on medical ground, he/she shall be permitted to complete the programme in a maximum period of seven years.
3. Under NEP 2020 implementation, the credits earned will be valid for a maximum period of seven years.
4. The student who opts for vocational training / field experience / experiential learning shall complete their degree in a maximum period of seven years.

6.2 M.Tech. Course Structure

1. The normal duration of the course leading to M. Tech. Degree is four semesters.
2. Earned credit requirements for 4-semester M.Tech. programmes shall be in the range of 80-90. Exact requirements for individual programmes shall be based on the teaching scheme of the programmes.

6.2.1 Maximum Duration for M.Tech. Programme Completion

Normally a student will complete all the requirements for any PG (M.Tech.) programmes in four semesters. Academically weak students, who are unable to pass in some courses and have to repeat them in subsequent semesters or register for lesser number of courses in a semester, shall be permitted to complete all the requirements of the degree in a maximum period of three years. However, if a student is granted withdrawal for one or more semesters on medical ground, he/she shall be permitted to complete the programme in a maximum period of seven semesters.

6.3 Integrated Five Years M.Sc. Course Structure

1. The normal duration of the course leading to M.Sc. degree will be ten semesters or five years.
2. Earned credit requirements for the 5 years M.Sc. programmes shall be in the range of 200 – 210. Exact requirements for individual programmes shall be based on the teaching scheme of the Programmes.
3. The curriculum of individual programmes may include seminar/ industrial visits /training / projects / dissertation in the final year which is to be satisfactorily completed before a student is declared eligible for the degree.

6.3.1 Maximum Duration of Integrated Five Years M.Sc. Programme Completion

Normally, a student will complete all the requirements for any 5 Years integrated M.Sc. programmes in ten semesters (five years). Academically weak students who are unable to pass in some courses and must repeat them in subsequent semesters or register for lesser number of courses in a semester of their own or as per the advice of the Academic Performance Review Committee (APRC), shall be permitted to complete all the requirements of the degree in a maximum period of seven years. However, if a student is granted withdrawal for one or more semesters on medical ground, he/she shall be permitted to complete the programme in a maximum period of eight years (16 Semesters).

6.4 M.Tech. (Research) Course Structure

The complete M.Tech. (Research) programme will be of 2.5 years (five semesters) and maximum duration of programme completion is 4 years, provided the fees are paid for each extended year(s). The maximum or minimum period will be counted from the date of registration to the

date of submission of dissertation. The candidate has to pay the requisite fee for each extended semester.

All the students are required to register and earn credits as described below. Total 60 credits are required to be earned for M.Tech. (Research) programme.

Credits will be assigned to the M. Tech (Research) programme as follows:

(a) Semester I: Four theory courses each of 4 credits, One credit seminar of 4 credits (MR 610)

(b) Semester II: Research Progress Seminar I (MR 620) of 4 credits

Notes:

(i) Minimum 8 credits are to be earned in First Semester as well as in Second Semester with above subject combinations. The minimum CGPA for Course Work and Seminar is 6.0 to be eligible to continue the M.Tech. (Research) programme and thereafter the confirmation of registration shall be done.

(ii) Courses I – IV are Theory courses, to be opted from regular M.Tech. programmes. The students have to attend regular class along with M.Tech. (Full Time) students. These courses will have written mid and end semester examinations as per the rules for M.Tech. (Full Time) programmes.

(iii) The student will submit two copies of credit/Research Progress seminar report to the supervisor(s). The student shall make oral presentation on his/her seminar topic as per time schedule decided by the supervisor(s) in front of a panel of examiner, namely, research progress committee (RPC), consisting of (a) supervisor(s) (b) one examiner recommended by the supervisor(s), and (c) one examiner to be appointed by the Chairperson, DAAC.

(c) Semester III: Research Progress Seminar II (MR 810) of 8 credits

(d) Semester IV: Research Progress Seminar III (MR 820) of 8 Credits

Notes:

(i) Research Progress Seminar will have one evaluation at the end semester before registration of next semester.

(ii) The examinations of Research Progress Seminar will be taken by a research progress committee as mentioned above.

(e) Semester V: Dissertation (MR 830) of 20 credits

6.4.1 M.Tech. (Research) Supervisor

1. All selected candidates shall be assigned one or two supervisor(s) from the Institute or work place of the student, at the time of selection. The other supervisor may be from the place of work of the candidate. The minimum qualification for the main supervisor is Doctoral degree, while minimum qualification for Co-supervisor is PG in appropriate branch of specialization.
2. The M.Tech. (Research) programme and the title of the research topic of a selected candidate shall be finalized by the supervisor(s) after mutual discussion.
3. Change of supervisor(s) under exceptional circumstances shall be permitted on recommendation of the DAAC after obtaining the consent of (i) the candidate (ii) the present supervisor(s) and (iii) the proposed supervisor(s).

(a) If the M.Tech. (Research) programme and/or area of the work requires modification and due to this change, the candidates' entire course programme requirement shall be

examined by the DAAC. If there is a change in the M.Tech. (Research) programme and/or title of the work, the registration date shall be revised, if found necessary.

(b) Whenever a supervisor leaves the Institute permanently or temporarily for a period exceeding one year, the DAAC shall appoint new supervisor(s) for the student. This is not applicable for candidate having more than one supervisor from the institute. Whenever a supervisor leaves the Institute temporarily for a period less than one year the DAAC shall make alternate arrangement, if necessary, for the guidance of the students.

(c) The DAAC may consider continuation of the original supervisor, when returns, to the Institute, as Co-supervisor of the students depending on the period for which he/she has supervised their M.Tech. (Research) programmes.

(d) Any such arrangements made shall be forwarded to the IAAC for approval.

4. A faculty can have a maximum FOUR M.Tech. (Research) students at a time.

6.4.2 Eligibility for Supervisor

1. A faculty member appointed against permanent post at SVNIT possessing Ph.D. degree shall be recognized as a main supervisor.
2. In all cases for M.Tech. (Research) registration, one of the supervisor(s) shall be compulsorily from the department in which the candidate is registered.
3. In case of Interdisciplinary areas, at least one supervisor(s) must belong to the discipline in which the student is registered. It is mandatory to have one of the supervisors from parent department.
4. In case the student intends to take a supervisor from his/her work place, the selected supervisor should be the competent person(s) holding M.E. / M.Tech. / Ph. D. degree in the respective discipline and get recognized by DAAC in the first semester.

6.4.3 M.Tech. (Research) Scholar's Place of Work, Progress and Duration

On the recommendations of the supervisor(s) and DAAC the Institute may allow the research work for the M.Tech. (Research) degree to be partially or wholly carried out at another organization duly approved for the purpose by the Institute for the students concerned. The departmental RPC shall evaluate the progress of M.Tech. (Research) work of the student and upon their satisfaction shall recommend continuation of his/her work. The departmental RPC shall submit their evaluation report in the prescribed format, through the Chairperson DAAC to the Academic section.

1. If the RPC is not satisfied with the progress of research work may recommend termination of registration to the Senate/SEC through the IAAC. The RPC shall comprise of the following members (i) Concerned supervisor(s) (ii) One faculty member nominated jointly by his/her supervisor(s) and (iii) One faculty member nominated by Chairperson DAAC from the concerned department or other department who is familiar with the concerned area of research work.
2. The formation of RPC for each student shall be completed by the Chairperson DAAC immediately after completion of minimum credit requirements of First Semester and intimated to the Dy. Registrar (Academics).
3. The members of RPC will be changed under extra ordinary circumstances in consultation with the Dean (Academics).
4. All the candidates have to carry out M.Tech. (Research) work in the Institute or in other recognized places for at least a period of two years from the date of registration before

submission of pre-synopsis. The above duration is inclusive of the coursework and credit seminar.

5. The period of validity of M. Tech (Research) registration is four years. The candidates may submit their dissertation before the end of this period subject to fulfillment of the degree requirement.
6. Any candidate who concurrently registers for any postgraduate degree at another organization shall be automatically deregistered at the Institute.

6.5 Ph.D. Course Structure

Ph.D. program minimum duration is 3 years and the maximum period allowed is 7 years irrespective of the category of the admitted student. The PhD Scholarship/Fellowship/Assistantship will be offered for a maximum of five years in the case of full-time institute research scholars. The duration/amount of fellowship is likely to change as per the directives of Ministry of Education, Government of India from time to time. The candidates may submit their thesis before the end of this period subject to the provisions mentioned in Ph.D. Thesis Evaluation.

The Ph.D. student must earn minimum 12 credits as a part of coursework through three or four subjects (each of 3 or 4 credits) including One credit seminar of Two credits. The candidate may register for these courses from (i) the existing courses being floated for PG Programs in the Institute or (ii) MOOC platform - NPTEL/SWAYAM. The PhD supervisors will ensure that students, who have completed their PG Programs from this Institute, should not opt for the same course as opted by them in their PG studies. The candidate should score 6.0 CGPA through coursework and credit seminar for the continuity of the Ph.D. programme and thereafter the confirmation of registration shall be done.

Students admitted after first year of their M Tech Programs from SVNIT, are required to earn 20 credits during the first two semesters. For directly admitted students after B.E./ B.Tech. or equivalent degree, the candidate should earn 40 credits within first TWO semesters of his/her programme through the theory/practical course work after joining the programme.

The credit seminar shall be evaluated by a committee consists of (i) supervisor(s), (ii) one examiner nominated by supervisor(s), and (iii) one examiner nominated by Chairperson, DAAC. The credit seminar exam should be conducted on or before the last date of end semester examination. Supervisor(s) should forward the grades awarded by the panels of examiners to the Academic Section by the end of the semester.

1. Grades shall be withheld when the student has not paid his dues or when there is a disciplinary action pending against him.
2. All full-time and part-time candidates must carry out Research for at least a period of three years from the date of registration before submission of thesis. The above duration is inclusive of the coursework and seminar assessment.

6.5.1 Ph.D. Supervisor

1. In each Department, applicants will be briefed about various research topics proposed by different faculty members for Ph.D. programmes. Prior to admission candidates are encouraged to meet the faculty members to discuss those topics with the respective faculty members and thereafter, indicate their choice in order of preference of supervisor(s). The applicants shall then be interviewed by a committee constituted by the DAAC.
2. All selected candidates shall be assigned one or two supervisor(s) from the Institute at the time of selection.

(a) Each external candidate may have only one additional supervisor in the sponsoring / parent organization where he is employed duly recognized by the institute through DAAC and IAAC.

(b) The research programme and the title of the research topic of a selected candidate shall be finalized by his/her supervisor(s) after mutual discussion.

(c) The external supervisor(s) of the PhD Program will not be paid TA/DA.

(d) A Ph.D. supervisor can have maximum number of candidates as per the approved policy of the Institute Senate from time to time.

3. Change of Supervisor(s)

(a) Under exceptional circumstances change of supervisor(s) shall be permitted on recommendation of the DAAC after obtaining the consent of (i) the candidate (ii) the present Supervisor(s) and (iii) the proposed Supervisor(s).

(b) If the research programme and / or area of the work require modification due to this change, the candidates' entire course programme requirement shall be examined by the DAAC. If there is a change in the research programme and / or title of the work, the registration date shall be revised, if found necessary.

(c) Whenever a supervisor leaves the Institute permanently or temporarily for a period exceeding one year, the DAAC shall appoint new supervisor(s) for the students before his departure. This is not applicable for candidate having more than one supervisor from the institute.

(d) Whenever a supervisor leaves the Institute temporarily for a period less than one year the DAAC shall make alternative arrangement, if necessary, for the guidance of his/her students.

(e) The DAAC may consider continuation of the original supervisor on his/her return to the Institute, as co-supervisor of his/her students depending on the period for which he/she has supervised their Ph.D. programmes.

(f) Any such arrangements made shall be forwarded to the IAAC for prior approval.

4. The number of PhD scholar working with a PhD supervisor, at a given point of time, would be as under:

(i) The maximum number of Full-time Institute Research Scholars (FIR) with a PhD supervisor would be Four (04) (04 as single supervisor or 08 as co-supervisor) at a given instant in the Institute.

(ii) Maximum Seven (07) number of PhD candidates (either singly or jointly), excluding FIR, QIP, and FPS candidates under sponsored research projects, can be registered by a PhD Supervisor at a given instant.

(iii) The candidate(s) who have submitted synopsis is (are) excluded from the above number.

6.5.2 Eligibility for Supervisor/Co-Supervisor

(a) Any regular faculty member of the institute will be the approved Ph. D. supervisor as soon as he/she obtains his/her Ph. D. qualification or joins the institute with Ph. D. degree.

(b) The existing eligible Ph.D. supervisors, who are retiring within three years, can take the Ph.D. students as Co-supervisor provided main supervisor is included from the department, having their service more than seven years.

(c) Regular faculty members (having Ph.D.) of all IITs, IIMs, IISc, NITs and all CFTIs (Centrally Funded Technical Institutes) are considered as recognized supervisors by the Institute. However, they must be recognized as supervisors in their respective institutes as well. The Director of NITs/IITs, Head of the Dept./Section of National Laboratories like ISRO/CSIR/PRL, etc. will be considered as a supervisor subject to his/her consent (however, the condition of recognition as a supervisor in his/her own institution/organization is not compulsory).

(d) The application for recognition as a co-supervisor is allowed only during the first three semesters of registration of the candidate.

(e) In all cases for Ph.D. registration, one of the supervisors shall be compulsorily from the Institute.

(f) In case of Interdisciplinary areas, at least one supervisor(s) must belong to the discipline in which the student is registered for research.

(g) Any faculty member having Ph.D. degree and retired voluntarily or upon reaching superannuation from the institute (SVNIT) will be treated as approved external Ph. D. supervisor. He can only be the Co-supervisor. However, he/ she can continue to be the main supervisor for any candidate already registered with him / her for three years prior to his / her retirement.

(h) If a qualified faculty member from a reputed institute, having consistently good ranking in NIRF (National Institutional Ranking Frame Work) (other than the IITs, IIMs, IISc, NITs and CFTIs) or a qualified person from a reputed industry/research organization applies for recognition as a co-supervisor through proper channel of his/her institute/industry/research organization, then the case may be discussed in the respective DAAC meeting and the recommendation may be sent to IAAC for further consideration. However, they must be recognized as supervisors in their respective institutes/universities as well (except those from reputed industries). The recognition is only Ph.D. candidate-specific.

6.5.3 Ph.D. Scholar's Place of Work, Progress and Duration

(a) On the recommendations of the supervisor(s) and DAAC the Institute may allow the research work for the Ph.D. degree to be partially or wholly carried out at another organization duly approved for the purpose by the Institute for part-time Ph.D. students.

(b) The FIR category students may carry out part of their research work at organization(s) with whom the institute has signed MoU. However, relaxation of MoU for sending Ph.D. student will be considered by the Director on case-to-case basis. Their attendance will be calculated as official visit. The total duration of work at outside should not exceed more than 30% of total duration (maximum one year) and no TA/DA will be granted from the institute.

(c) The external organization where a candidate wishes to carry out the research work partially or wholly shall have to be recognized by the Institute before such work is undertaken.

(d) Every external candidate shall carry out a part of his/her study of his/her Research work residing at the Institute for a period, which shall be in no case less than one semester.

(e) The sponsoring organization must certify that the candidate has been fully relieved of normal duties/granted leave during the period of the residential requirement.

(f) External candidates will be provided with hostel accommodation, subject to availability, only during the semester(s) in which the residential requirement is to be fulfilled. However, his/her stay may be extended for a period of more than six months if recommended by his/her supervisor in some specific cases.

6.5.4 Formation of Research Progress Committee

The formation of RPC for each student shall be completed by the Chairperson DAAC immediately after completion of minimum credit requirements. The details of such committee formation will be intimated to the Dean (Academics).

The RPC shall comprise of the following members.

(i) Concerned Supervisor(s)

(ii) One or two faculty members nominated by his/her supervisor(s) from the concerned department or other department of the institute.

(iii) One faculty member nominated by the Chairperson DAAC who is familiar with the concerned area of research work.

The members of RPC may be changed under extraordinary circumstances only in consultation with the Dean (Academics).

6.5.5 Review of Research Progress

Each candidate, after completion of credit requirements will deliver a research progress seminar (RPS) in each semester before his/her research progress committee (RPC). The late presentation of RPS beyond the duration of any term, but not later than the last date of registration of the next term as per the academic calendar of the institute, is allowed. Any further extension required in delivering the RPS beyond the admissible date, on exceptional circumstances, has to be approved by the Dean (Academics).

The RPC shall evaluate the progress of research work of the student and upon their satisfaction shall recommend continuation of his/her work. The RPC shall submit their evaluation report in the prescribed format, to the Dean (Academics) through the Chairperson DAAC.

The registration of the Ph.D. candidate will automatically be discontinued, if he/she is awarded unsatisfactory in two consecutive research progress seminars.

6.5.6 Ph.D. Candidate Category Change

The Ph.D. candidates should be very careful in exercising their categories during the Ph.D. admission. The change of category will invariably be discouraged during the program, however, under genuine circumstances; they will be permitted to change the category only after completion of 3rd semester.

(a) The maximum number of category conversions allowed is limited to two for FPS and ERS categories of the students.

(b) Full time institute research scholar FIR may change the category to part time external candidate ERS, if employed after completion of 3rd semester.

(c) For category conversion to ERS, No Objection Certificate (NOC) from the present employer/necessary documents must be produced within a month.

(d) Change of category is possible as below:

1. ERS to FPS (if project funds are available – approval of DAAC, Dean (R&C), IAAC, and relieving letter from present employer. Scholarship will be paid as per research project agency rule.)
2. FPS to ERS (by default if project funds are not available – approval of DAAC, Dean (Academics), Dean (R&C), IAAC, and No Objection Certificate from the employer, if employed, required.)

3. FIR to ERS (by default on completion of maximum scholarship duration or candidate joining any organization/institute – approval of DAAC, Dean (Academics), IAAC, and No Objection Certificate from the employer, if employed, required.)

(e) FIR category student is availing GATE / NET scholarship / assistantship. Choice of FIR category is allowed during the admission time only, from any other category to FIR category change is not permitted.

7 REGISTRATION

Following are the common guidelines for different programmes. It is followed by specific registration criteria for each program.

1. Every student of UG / PG (B.Tech. / M.Tech. / M.Sc.) / M.Tech. (Research) / Ph.D. programmes is required to register at the commencement of each semester as per the schedule notified in academic calendar online through Institute Management Information System (MIS). The student has to submit the signed registration form through faculty advisor after verification of the subject details filled to the academic section. The student has to pay semester fees before the registration of the semester.
2. A student who does not register as per schedule for the purpose may be permitted, in consideration of any compelling reason, late registration is permitted up to TWO weeks and more TWO weeks under exceptional circumstances with a permission of the Chairperson of the Senate with late registration fee prescribed the institute. Without semester registration, the student will not be allowed to attend the semester and admission may be treated as cancelled.
3. Only those students will be permitted to register in the next semester who have
   (a) cleared all the institute, hostel and library dues and fines (if any) of the previous semesters.
   (b) paid all required payments of institute and hostel for the current semester.
   (c) satisfies the minimum academic requirements, and
   (d) not been debarred from registering on any specific ground.
4. Registration for the subjects having 'FF' and 'XX' grades in earlier semesters
   (a) Students obtaining 'FF' grade in a subject or a laboratory course must appear in the supplementary examination of the concerned subject or laboratory course whenever scheduled by the institute.
   (b) Students obtaining 'XX' grade in a course must repeat the concerned course by re-registering in the next appropriate semester whenever the course is offered. 20% of tuition fees per course for a maximum of 3 courses is to be paid instead of paying the full tuition fees of the semester for the subjects in which the student has obtained the 'XX' grade. However, if he/she has 'XX' grade in more than 3 courses then he/she has to pay the full tuition fees and repeat those courses in the regular semester in which the courses are offered and he/she will not be allowed to go the next year without clearing the 'XX' grades in the courses. The course can be a theory subject, practical, workshop, seminar, project, etc.
   (c) In case of failure in any noncredit course the student will have to re-register for it in the appropriate semester of the next academic session.

5. Students may add and drop subject(s) with the concurrence of the Academic Performance Review Committee (APRC) under intimation to the concerned course instructors and the academic section provided this is done within the date mentioned in the academic calendar.
6. The classes of all semesters will start from the day following the registration as per the Academic Calendar.
7. A student who has been debarred from appearing at an examination either (a) as per recommendation of the subject teacher for unsatisfactory attendance or (b) by the Institute as a measure of disciplinary action or (c) for adopting malpractice at an examination may register for the subject after the term of the debarment expires, provided that other provisions of the regulation do not prevent him/her.
8. An elective course will normally be offered only if there is a minimum registration of
    a. 15 students for UG B.Tech. programmes and M.Sc. programmes and maximum 75 (one division)
    b. 6 students for PG programme

7.1 M.Tech. (Research) Registration

1. Every student is required to register for a seminar and the approved theory courses in respective department at the commencement of 1st semester after consulting the supervisor as notified in the Academic Calendar. Moreover, the students will have to register for each subsequent semester till submission of the dissertation.
2. The procedure for registration for M. Tech (Research) shall be as follows:
    a. The candidate shall obtain M. Tech (Research) Registration Forms and application form for registration from the Academic Section after payment of the prescribed fees.
    b. The entire M. Tech (Research) programme of the candidate shall be finalized by the respective department as per the course structure.
    c. The candidate shall fill in the registration form in consultation with the supervisor(s) and submit them to the respective Chairperson DAAC.
    d. The Chairperson, DAAC shall approve the M. Tech (Research) programmes of all candidates after due scrutiny.

7.2 Ph.D. Registration

Every student after consulting his/her supervisor is required to register mandatorily for the approved courses and/or for research progress seminar with the PhD Coordinator of respective department at the commencement of each semester on the day fixed for such registration and notified in the Academic Calendar. If a student fails to register in a given Semester, his/her name will be removed from the Institute roll.

The students who will be reporting further for late registration, their cases will be considered by the Institute Director on case-to-case basis.

Only those students will be permitted to register in the next semester who have:

(a) Cleared all Institute, Hostel and Library dues and fines (if any) of the previous semesters.

(b) Paid all required advance payments of Institute and Hostel dues for the current semester and not been debarred from registering on any specific ground.

The procedure for registration for courses shall be as follows:

1. The candidate shall obtain Course Registration Form and 'First Registration for Ph. D. Programme' form, from the Academic Section after payment of the prescribed fees.
2. The department shall finalize the entire course programme of the candidate in consultation with the Supervisor(s). The course programme will include the course(s) to be registered and credit seminar(s) to be delivered by the student.
3. The candidate shall fill in the Course Registration Form and 'First Registration for Ph. D. Programme' form, in consultation with the Supervisor(s) and submit them to the academic section and respective Department.
4. The Dean (Academics) shall inform the IAAC of any discrepancy in the Registration. However, the candidates should ensure on their own that they comply with the credit requirements.
5. The DAAC shall approve the course programmes of all candidates after due scrutiny.

A candidate can register for one or more courses not registered earlier or modify one or more courses registered earlier within the first two weeks from the commencement of classes provided the course credit requirements remain unchanged.

Every student, after fulfilling of minimum credit requirements must confirm the registration for Ph.D. programme by filling the appropriate form.

8 ATTENDANCE REQUIREMENT AND ASSISTANTSHIP

All students must attend every lecture, tutorial, and practical classes. In order to maintain the attendance record of a particular course, a roll call will be taken in every scheduled lecture, tutorial and practical class. For the purposes of attendance, every scheduled practical class will count as one unit irrespective of the number of contact hours. However, to account for late registration, sickness, or other such contingencies like participating and presenting the institute at different events at the national and international levels, the attendance requirement will be a minimum of 75 % of the scheduled classes. There is no compensation in evaluation of course due to any kind of absence.

1. The attendance requirement of minimum 75% shall be adhered to and the student obtaining attendance less than 75% and more than 60% in a subject shall be awarded one grade lower than the actual grade obtained by the student.
2. A student with less than 60% attendance in a course during a semester, in lectures, tutorials and practicals (as applicable) taken together will be awarded an 'XX' grade. The student has to clear the subject through (1) registering in a regular semester whenever the same subject is offered in the respective semester or (2) registering in Special Summer Classes if conducted in the respective academic year. The registration for Special Summer Classes and execution process will be announced by the academic section time to time with necessary approval of the Chairperson, Senate.
3. The faculty will submit the attendance record with percentage attendance detail to the academic section.
4. If a UG/PG/M.Sc./Ph.D. student is continuously absent from the Institute for more than six weeks without notifying the Dean (Academics) of the Institute his/her name will be removed from the Institute roll. However, such student may appeal to the Director to reconsider his/her case on merit. However, the decision of director will be final and binding to the student.

5. It will be the responsibility of the student to intimate the Dean (Student Welfare), the Warden of the hostel in which he is residing and the concerned Course Instructor about his absence before availing the leave.

8.1 Attendance Requirements for GATE Scholarship / Assistantship

An M.Tech. student irrespective of the source of assistantship, must attend at least 75 % of classes in each course in which he/she is registered. In case his/her attendance falls below 75% in any course during a month, he/she will not be paid assistantship for that month. Further, if his/her attendance again falls short of 75 % in any course in any subsequent month in that semester his/her assistantship will be terminated. The monthly stipend form of the student is to be signed by the course teachers, PG Incharge and the Head of the Department in the 1st year of the programme and by the supervisor, PG Incharge and Head of the Department in the 2nd year of the programme.

8.2 Duration of PG GATE Scholarship / Assistantship

The PG student who is admitted based on GATE score is eligible for MoE assistantship – GATE Scholarship provided by Ministry of Education, Government of India for a maximum duration of 24 for Months from the date of completion of the registration process at the institute after the confirmation of an admission by CCMT. The student will avail the assistantship / scholarship for a duration whichever is minimum duration from the date of completion of the registration process at the institute after the confirmation of an admission by CCMT or the beginning of the new academic year till (i) 24 months or (ii) the date on which student submit the final dissertation as per the date announced in the academic calendar or (iii) the last date of teaching of 4th semester on the request from the student in case if he/she wants to join any organization.

8.3 Attendance Requirements for Ph.D. Student

Attendance in all classes (Lectures, Tutorials etc.) must be at least 75 % of the total classes. A student will be debarred from appearing in an examination if his attendance falls below 75 % including all types of leave.

8.3.1 Eligible Leave Rules for Full time Ph.D. Scholar availing stipend / scholarship

Prior application for leave has to be submitted by the student to the Head of the Department concerned stating the reasons for the leave requested along with supporting document(s), wherever applicable. Such leave will be granted by the Head of the Department and the absence will not be counted for computation of attendance. The norms of granting the leaves to the PhD students are appended in following paragraphs:

(a) During his/her stay at the Institute will be entitled for thirty (30) days leave during each academic year, including leave on medical ground. These scholars are not entitled to have vacation. Even during mid / end semester breaks and summer / winter vacations, he/she will have to explicitly apply for leave.

(b) He/she is eligible for eight (8) casual leaves in an academic calendar.

(c) Duty leaves up to thirty (30) days in an academic year may be granted by HOD on recommendation of Ph.D. Supervisor for data collection, testing / measurements (if facility not available within the Institute), presenting research papers in conferences, attending workshops/conferences including training programmes / seminars required for his/her research work, etc. Additional period of duty leaves, if required, may be sanctioned by Dean (Academics) based on the recommendation of Ph.D. Supervisor and HOD.

(d) The Ph.D. student may be allowed to leave station for visiting other places (in addition to the collaborating Organizations / Institutes / Industries) preferably after completion of their

course work or during vacations when there is no teaching work scheduled, if recommended by Supervisor and HOD, and approved by Dean Academic well in advance.

(e) Research scholar will be eligible for Maternity/Paternity Leaves with assistantship as per Government of India notifications released from time to time for research scholars.

(f) In case the Ph.D. student is on roll for part of the academic year, the proportionate leaves can be availed by him/her.

(g) Leaves of the student of any kind will not be carried forward to the next academic calendar.

(h) Calculations of prefix and suffix for availing holidays with the leaves will be as per the norms of earned leaves/casual leaves of the Institute faculty members.

(i) Absence for a period not exceeding one week in a semester due to sickness or any other unavoidable reasons for which prior application could not be made may be condoned by the Head of the Department provided he/she is satisfied with the explanation. This leave is subject to certification by Competent Medical Authorities and attested by Institute Medical Officer. However, the total absence in a semester including all types of leave should not exceed 25%.

(j) If the period of absence is likely to exceed two weeks, a prior application for grant of leave will have to be submitted through the Head of the Department to the Dean (Academics) with supporting documents. In each case, the decision to grant leave shall be taken by the Dean (Academics) on the recommendation of the Head of the Department. However, stipend payment for the students shall be governed as per the rules of the Institute.

(k) The Dean (Academics) may, on receipt of an application also decide whether the student be asked to withdraw from the course for that particular semester because of long absence.

8.4 Ph.D. Scholarship

1. The Institute Research Scholars (FIR) will be paid scholarship at a rate in accordance with the directives from the appropriate authorities as notified from time to time.
2. Institute Research Scholars are eligible to receive scholarship for a maximum period of Four years and extendable to Five years subjected to satisfactory progress made by him/her, critical review and recommendation of RPC panel as well as MoE directives.
3. If in the opinion of the research progress committee the continuation of registration and scholarship cannot be recommended, the committee may stipulate a period of time, not less than three months, for the candidate to re-appear before the research progress committee for the consideration of continuation of research work and scholarship.
4. An approval of the head of the Institute is required for withheld / starting of stipend for PhD students under FIR category based on his/her RPS performance.
5. Any Ph.D. scholar must not avail the financial support in terms of scholarship/stipend/contingency grants from multiple sources at a given instant. If this rule is violated by any Ph.D. students, the disciplinary action will be taken and it may lead to the cancelation of the student registration from the programme.

9 MONITORING OF ACADEMIC PERFORMANCE OF WEAK STUDENTS

At the end of each semester, academically poor students will be identified by the following criteria of academic performance:

(a) Earned credits in a semester falling below 50% or

(b) CGPA falling to 4 or less.

All students identified by the above criteria at the end of each semester will have their academic records monitored by the Academic Performance Review Committee (APRC). These students will have to meet the APRC which would try to assess the causes for unsatisfactory performance and advise him/her accordingly so that the performance improves. The APRC may also recommend an upper limit on the number of courses or total number of credits to be registered by the student in the subsequent semesters. This advice is binding and no relaxation will be made. In addition, the student's department and the course teachers will be requested to monitor the student's performance.

The APRC while reviewing the academic performance of weak students would also recommend termination of registration if a student fails to satisfy the minimum academic criteria laid down for continuation as a student at the end of each academic year (i.e. even semester). Details of the criteria for continuation of registration (i.e. continuation as a student) are given under following Section.

10 TERMINATION FROM THE PROGRAMME

Following are the guidelines for termination of the programme for a particular student of UG/M.Sc./PG/Ph.D.:

1. If a student remains continuously absent for more than six weeks in a semester without sanction of leave, his/her name shall be struck off from the rolls of the Institute. However, such students may appeal to the Director to reconsider their cases on merit.
2. A student may be required to leave the Institute on disciplinary grounds on recommendation of the Disciplinary Committee.
3. A student shall have to leave the Institute if he/she fails to satisfy the minimum academic criteria prescribed for continuation as a student at the end of each academic year as stated below:

   A student must complete 50% of the credits cumulatively for being eligible to register in the next academic year of graduation. Otherwise, the student has to re-register for the same year of UG/M.Sc./PG in the next academic year with a condition that the maximum duration of the completion of the programme for UG – it is 7 years, M.Sc. – it is 7 years and for PG – it is 4 years from the date of first registration is not crossed, otherwise the registration shall be cancelled/terminated.

10.1 M.Tech. (Research) Programme Termination

The period of validity of M.Tech. (Research) registration is four years. If the candidate is not able to submit the thesis within this time frame, he/she may apply to the Director for an extension of six months under exceptional situation. The Director may consider such application case to case basis. If such application is not submitted by the candidate or approved by the Director, the candidate registration will be cancelled as termination from M.Tech. (Research) programme.

10.1.1 Withdrawal from the Institute

(a) If a student withdraws from his/her M.Tech. (Research) Programme within the first Semester after admission, his/her student status ceases and he/she would not be readmitted with any weightage for the credits acquired.

(b) The student will loose the student status if he/she leaves any time without prior permission of the Institute.

10.2 Ph.D. Programme Termination

The period of validity of Ph.D. registration is seven years irrespective of the category of the scholar. If the scholar is not able submit the thesis within this time frame, he/she may apply to the Director for an extension of six months for submitting the pre-synopsis and synopsis under exceptional situation. The Director may consider such application case to case basis. If such application is not submitted by the scholar or approved by the Director, the registration of the scholar will be cancelled as termination from Ph.D. programme.

10.2.1 Withdrawal from the Institute

(a) If a student withdraws from his/her Ph.D. Programme within the first two years after admission, his/her student status ceases and he/she would not be readmitted with any weight age for the credits acquired during the period of stay.

(b) In case a student wishes to temporarily withdraw from his/her Ph.D. Programme, for a maximum of period of one year, he/she may do so only after a period of two years, following his/her date of registration with prior permission of the Senate.

(c) If a student leaves the programme any time without prior permission of the Institute, he/she will lose his/her student status.

11 EVALUATION AND GRADING

The evaluation process of the course will be notified by the faculty member (Course Coordinator) in the beginning of the semester.

1. This evaluation will be divided into three parts continuous, mid-semester, and end-semester evaluations.
2. Generally, total marks
    a. for theory evaluation of a subject is 100 marks (20% Continuous evaluation through assignments / quizzes, 30% Mid Semester Examination and 50% End Semester Examination), the duration for mid-semester examination is of one hour and thirty minutes and the duration of end-semester examination is of three hours duration.
    b. for tutorial evaluation of a subject is 25 marks (100% Continuous evaluation through number of assignment / quizzes),
    c. for practical evaluation of a subject is 50 marks (100% Continuous evaluation through number of laboratory work / mini-project / designs).
3. For the subject having tutorial (T) and practical (P), the evaluation will be continuous evaluation and there is no end-semester evaluation. The continuous evaluation will be in the form of assignments for tutorial (T), and for practical (P) it is laboratory work, mini-project / design and viva.
4. The evaluation pattern for the theory courses shall be as under:
    a. Mid Semester exam : 30 marks (30%)
    b. Assignment/Quizzes : 20 marks (20%)
    c. Makeup Mid Semester Examination (due to absence in mid-semester examination on medical reasons) : 30 marks (30%)
    d. End Semester Exam : 100 marks question paper (converted to 50 marks - 50%)
5. The course teacher/coordinator is required to maintain a detailed record of the performance of the students in each assessment. When all the assessments in the course

are complete, total marks obtained are converted into a grade. The evaluated answer books shall be shown to the students before finalizing the grades. The answer books should be maintained by the department for the accreditation process and will be disposed as per the instructions of the competent authority from time to time.

6. For the first-year students, if student avails less than twelve marks in the mid semester examination of any subject, he/she may appear in the Makeup Mid Semester Examination to improve the performance. However, the maximum marks considered will be twelve for grading purpose. Such students should register their name with course coordinators at least one week before the beginning of the Makeup Midsemester Examination.

11.1 Credit System

Presently, institute follows 10.0 points grading system. The prominent features of the credit system are the process of continuous evaluation of a student's performance, the absence of pass or fail on an annual basis and the flexibility to allow the students to progress at a pace suited to individual ability and convenience, subject to the regulations of credit requirements.

Each course, except a few special courses, has a certain number of credits assigned to it depending upon its lecture, tutorial and laboratory contact hours in a week.

Each course is coordinated by a member of the faculty called the course coordinator. He/she has the full responsibility for coordinating the course, coordinating the work of other members of the faculty involved in that course, holding the tests, and awarding the grades. In case of any difficulty, the student is expected to approach the course coordinator for advice and clarification.

A letter grade, corresponding to specified number of grade points, is awarded in each course for which a student is registered. On obtaining a pass grade, the student accumulates the course credits as earned credits. A student's performance is measured by the number of credits that he/she has earned and by the weighted grade point average. A minimum number of credits should be acquired in order to qualify for a degree and continuation on semester basis.

11.2 Performance Evaluation- SGPA and CGPA

The performance of a student is evaluated in terms of two indices, viz. the Semester Grade Point Average (SGPA) which is the Grade Point Average for a semester and Cumulative Grade Point Average (CGPA) which is the Grade Point Average for all the completed semesters, at any point of time.

The SGPA is calculated on the basis of grades obtained in all courses registered for the semester.

$$SGPA = \frac{\sum_{Course\ in\ a\ Semester}^{n}(Course\ Credit\ x\ Grade\ Point)}{\sum_{Cousre\ in\ a\ Semester}^{n}(Course\ Credit)}$$

The CGPA is calculated on the basis of all pass grades obtained in all completed semesters

$$CGPA = \frac{\sum_{All\ Semesters\ Completed}^{m}(Course\ Credit\ x\ Grade\ Point) in\ passed\ courses}{\sum_{All\ Semesters\ Completed}^{m}(Course\ Credit)\ \ in\ passed\ courses}$$

Both SGPA and CGPA will be rounded off to second place of decimal and recorded as such.

11.3 Conversion of CGPA into Equivalent % of Marks

Average %age of marks = CGPA x 10

Award of Class:

First Class with Distinction: 70% and above

First Class: Below 70% and upto 60%

Second Class: Below 60% and upto 50%

Pass Class: Below 50% and upto 40%

11.4 Award of Grades

Based on the performance of a student, each student is awarded a final letter grade in each subject at the end of the semester. The letter grades and the corresponding grade points are as follows:

Grade	Grade Points	Description of Performance
AA	10	Outstanding
AB	9	Excellent
BB	8	Very Good
BC	7	Good
CC	6	Average
CD	5	Below Average
DD	4	Marginal
FF	0	Fail
II	-	Incomplete (For absence in end-semester examination on medical reasons)
NA	-	Not Appeared in Examination
WW	-	Withdrawal from Semester
XX	-	Unsatisfactory attendance in a course

11.5 Description of Grades

Following is the description of grades awarded in a particular course.

(a) AA Grade

An 'AA' grade stands for outstanding achievement. The minimum percentage of marks for an award an of 'AA' grade is 80%. However, individual course coordinators may set different requirements depending upon the class performance.

(b) DD Grade

The 'DD' grade stands for marginal performance, i.e., it is the minimum passing grade in any course. The minimum percentage of marks for an award of the 'DD' grade is 36%. However, the student must secure at least 30% marks in the end semester examination, otherwise, he/she will be awarded the FF grade.

(c) II Grade

An 'II' grade denotes incomplete performance in any course (theory, lab) due to absence at the end of the semester on medical grounds. In such cases, the student can apply for 'II' grade. An application requesting 'II' grade should be made at the earliest, but not later than the last day of the examination. This application should be made to the Head of Department of the student's programme who, depending on the merit of the case, will grant approval and inform all the concerned course coordinators and Deputy Registrar (Academics). The student should subsequently complete all course requirements within fifteen days from the date of the last end semester examination except in theory courses. The 'II' grade will then be converted to a proper grade (AA to FF).

The 'II' grade can be awarded for incomplete project work, at the end of a semester. Subsequently, it is converted into a regular grade upon completion of the project work and its evaluation. The 'II' grade may also be awarded for Dissertation Preliminaries of the 3rd semester of M.Tech. programme.

(d) NA Grades

The students who remain absent in the end semester examination or supplementary examinations (not on medical grounds) will be awarded 'NA' grade instead of 'II' grade.

(e) FF Grade

The 'FF' grade denotes poor performance, i.e., failure in a course. A student has to repeat all compulsory (core) courses in which he/she obtains 'FF' grade until a passing grade is obtained. For the other (elective) courses in which 'FF' grade has been obtained, the student may take the same course or any other course from the same category.

His/her earned credits during the semester may fall short of the required number and he/she may be asked to leave the Institute. 'FF' grade may result in an increased period of stay for completing degree requirements. Further, 'FF' grade secured in any course stays permanently on the grade card.

(f) WW Grade

A 'WW' grade is awarded in a course where the student has opted to withdraw from the course. Withdrawal from a course is permitted until one week before the mid-semester examination.

(g) XX Grade

The 'XX' grade is awarded for unsatisfactory attendance.

A candidate is considered to have completed a subject successfully and earned the credits if the secures a letter grade other than 'XX' or 'FF' in that subject. A letter grade 'FF' in any subject implies a failure in that subject.

11.5.1 Earned Credits (EC)

The credits for the courses in which a student has 'DD' (minimum passing grade for a course) or a higher grade will be counted as credits earned by him/her. Any course in which a student has obtained FF or WW grade will not be counted towards his/her earned credits.

11.6 Guidelines for the Award of 'II' Grade in PG Dissertation

An M.Tech. student is required to submit a dissertation as a part of curriculum. A regular student who is unable to complete his/her Dissertation at the end of fourth semester may be awarded an 'II' grade on recommendation by a committee consisting of (i) Head of the Department (ii) Nominee of the Director (iii) Supervisor(s) of the project.

A student who has been awarded an 'II' grade is required to formally register for the next semester and pay the fees. Also, he will be normally required to vacate the hostel room.

'II' grade in the Dissertation will be awarded in exceptional cases under the circumstances beyond student's/supervisor's control. However, the following are the grounds recognised for the award of 'II' grade:

(a) Medical grounds to the satisfaction of the Institute authorities.

(b) Technical reasons/grounds such as supervisor/equipment not being available.

12 MODERATION OF RESULTS

The answer books of end semester examinations after evaluation shall be shown to the students by the concerned teachers within a week after the conduct of exams. 'Student consultation period' of 2 or 3 days may be intimated to the students before finalizing the marks. The purpose of student consultation period is twofold: (i) to answer any query that a student may raise about the marks awarded, and (ii) to correct any factual errors that may have occurred, e.g., in totaling, etc. The marks should in no case be changed based on student's reaction. The final grades shall be forwarded to the Academic Section by the concerned Course Coordinators as per the last date specified in the academic Calendar. The final grades awarded to students shall be moderated every semester as per the academic calendar by a committee constituted by the institute.

13 EXAMINATIONS

1. All the examinations be conducted by following the code and conduct of examination approved by the Senate. The end semester examinations shall be conducted during the time schedule decided at the Institute Level.
2. Students who have satisfactory attendance record and paid institute and hostel dues of the Semester will be eligible for appearing in the examination. A student may be debarred from appearing in the examination as the result of disciplinary action.
3. Students who are unable to appear in the semester-end examination due to some compelling reason such as serious illness or other special circumstances will be given II grade (on medical grounds) and NA grade (on non-medical grounds) and will be permitted to appear in a supplementary examination to be conducted as scheduled by the institute.
4. Students who have failed in one or more courses in the end semester examination of a semester, will be permitted to appear only in the supplementary examinations as scheduled by the institute and to be conducted preferably before the commencement of the next semester. The original grade will be modified to a new grade (AA to FF) based on the performance in the supplementary examination.
5. A student must complete 50% of the credits cumulatively for being eligible to register in the next academic year of graduation. Otherwise, the student has to re-register for the same year of UG/M.Sc./PG in the next academic year with a condition that the maximum duration of the completion of the programme for UG – it is 7 years, M.Sc. – it is 7 years and for PG – it is 4 years from the date of first registration is not crossed, otherwise the registration shall be cancelled/terminated.
6. The course coordinator shall make MIS entries and submit the results of his/her course. However, the grade sheet generated through the MIS must be submitted by the course coordinator to the Examination/Academic section within 2 days of online submission.
7. Any change of grade of a student in a subject, consequent upon detection of any genuine error on the part of the concerned teacher, must be approved by the DAAC and forwarded to the Academic / Examination Section by the concerned coordinator through the Head of the Department.

14 REQUIREMENTS FOR AWARD OF DEGREE

UG / PG / M.Sc./ Ph.D. degree or NEP Exit-Equivalence degree will be awarded to the students fulfilling the requirements laid by the senate. NEP Exit-Equivalence degree at each mentioned in the Table 1 and Table 2 with minimum credits to be earned by the student is 40 for exit at any

programme. The regular degree B.Tech. / M.Tech. / M.Sc. / M.Tech. (Research) / Dual Degree / Ph.D. requirement is as follows.

14.1 B.Tech. Degree

The maximum span of validity of credits is 7 years.

1. Earned Credit Requirement

   Earned credit requirements for the various B. Tech. programmes are completion of credits based on the teaching scheme of individual programmes.

2. CGPA Requirement

   A student must obtain a minimum Cumulative Grade Point Average (CGPA) of 4.5 to be eligible for award of the B. Tech. degree.

3. Vocational Training / Professional Level Experiential Learning / Industry Internship / Practical Training Requirement

   With an introduction of vocational training / experiential learning / industry internship under NEP 2020, the student registering for this will be evaluated by the department as described in the evaluation process in Section.

4. A student will be awarded B. Tech. degree in the relevant programme if he/she has fulfilled the following requirements:

   a. Completed earned credit requirements for the programme as specified in the scheme of teaching and examination.

   b. Obtained a CGPA of 4.5 or more on completion of earned credit requirements.

   c. Satisfactorily completed all the non credit courses (Practical or Industrial Training) required for the programme.

   d. Paid all the dues to the Institute and Hostel.

   e. No disciplinary action is pending against him/her.

14.2 Dual Degree B.Tech. + MBA

The maximum span of validity of credits and degree completion is 7 years. The minimum number of credits that student has to earn is 120 credits at B.Tech. level (three years of UG study) and 80 credits during next two years of MBA study.

14.3 M.Tech. Degree

The maximum span of validity of credits and degree completion is 3 years.

(a) Earned Credit Requirement

Earned credit requirements for the various M.Tech. programmes are completion of credits for 4-semester programmes based on the teaching scheme of individual programmes.

(b) CGPA Requirement

A student must obtain a minimum Cumulative Grade Point Average (CGPA) of 5.0 to be eligible for award of the M. Tech. degree.

14.4 M.Sc. Degree

A student will be awarded M.Sc. degree in the relevant discipline if he/she has fulfilled the following requirements:

(a) Earned Credit Requirement

Earned credit requirements for the various M.Sc. programmes are completion of 200–210 earned credits based on the teaching scheme of individual programmes.

(b) CGPA Requirement

A student must obtain a minimum Cumulative Grade Point Average (CGPA) of 4.5 to be eligible for award of the M. Sc. degree.

(c) Satisfactorily completed all the non credit courses required for the programme.

(d) Paid all the dues to the Institute and Hostel.

(e) No disciplinary action is pending against him/her.

14.5 M.Tech. (Research) Degree

The maximum duration is four years for thesis submission. The student has to defend the final viva-voce examination. A students shall be declared eligible for award of M. Tech (Research) Degree if he / she has:

1. Completed all the Course Work and Seminar requirement for the degree with CC or higher grade in each of the subjects, seminars, and dissertation.
2. Obtained the minimum CGPA requirement of 6.0 at the end of Course Work and Seminars.
3. M.Tech. (Research) work has been carried out within / outside the Institute under the guidance of supervisor(s) for at least two years (before pre-synopsis) after the date of registration. The above period includes Course work and Seminars.
4. The candidate's one paper has been accepted or published in refereed National or International journal under SCIE.
5. The dissertation submitted by the candidate has been recommended for the award of the M.Tech. (Research) degree by one external referee and the supervisor(s) and by the Board of Examiners (BOE) constituted for the viva-voce examination.
6. Defended the M. Tech (Research) work at an open viva-voce examination conducted by the BOE.
7. The award of M. Tech (Research) degree must be recommended by the Senate.

14.5.1 M.Tech. (Research) Dissertation Evaluation

Prior to the submission of the synopsis of the thesis, a comprehensive internal assessment of the Research work should be made by a panel consisting of the RPC members and one or two faculty members, who are familiar with the concerned area of research work from the Institute, appointed by the Dean (Academic) in consultation with the supervisor(s).

14.5.1.1 M.Tech. (Research) Pre-synopsis Submission

1. This assessment will be through a pre-synopsis seminar. The candidate can submit the synopsis only if the panel is satisfied about the quality of the work for submission as a M.Tech. (Research) dissertation.
2. Details of the pre-synopsis seminar shall be adequately notified so as to enable interested staff members and students to attend the same.
3. The Chairperson of the pre-synopsis evaluation panel shall forward the panel's report to the Deputy Registrar (Academics) through the Dean (Academics) for Office record for the Academic section.

14.5.1.2 M.Tech. (Research) Synopsis Submission

1. The candidate shall submit FOUR copies of the synopsis of the work at least two months before submission of dissertation through the Chairperson DAAC to the Academic section with the following certificates:
    a. Certificate from the Chairperson, DAAC that the prescribed course credits are completed.
    b. Copy of report from the Chairperson of the panel of examiners for pre-synopsis seminar.
    c. Certificate that the pre-synopsis seminar has been completed satisfactorily.
    d. Certificate from the Research Supervisor(s) stating:
        i. That there is a *prima facie* case for consideration of the dissertation including the mandatory publication requirement, i.e., proof of communication of research paper(s).
        ii. That the dissertation does not contain any work which has been previously submitted for the award or any degree, and
        iii. The extent of collaboration, if any,
        iv. "No dues Certificate" from all Sections, Hostel and Library that there are no arrears/dues up to the date of submission of dissertation.
2. The M. Tech dissertation shall be written in English in the approved format.

14.5.1.3 M.Tech. (Research) Thesis Submission

1. The candidate shall submit four copies of the dissertation to the academic section within two months after approval of synopsis and not later than the limit of maximum duration for M.Tech. (Research).
2. The M.Tech. (Research) Thesis, at the end, should also consist of a declaration certificate as per the format approved in anti-plagiarism policy of the Institute.
3. Along with the dissertation, the candidate shall submit the requisite forms containing the authorization from the supervisor(s) for submission of the dissertation and a certificate from account section that there are no dues against the candidate.
4. Immediately after satisfactory completion of pre-synopsis seminar, supervisor(s) will submit the proposed list of external referees to the HOD/Chairperson DAAC. The list should be consisting of FIVE members from India with PhD degree and working in the relevant area of research. The HOD/Chairperson DAAC upon satisfaction shall forward the same to the Dean (Academics). The Dean (Academics) upon satisfaction shall forward it to the Director as the Senate Chairperson for selecting one external referee.

14.5.1.4 M.Tech. (Research) Thesis Review Report

1. The referee shall independently report to the Dean (Academics) of the Institute, preferably within four weeks from the date of the receipt of the dissertation. The Dean (Academics) should convey to the referee that following information should be included in assessment report
    a. a critical survey and evaluation of the quality and quantity of the work as embodied in the dissertation.
    b. Questions, if any, to be asked or points to be clarified at the viva-voce examination, and

c. A definite recommendation as to whether the dissertation is acceptable for the award of the degree of M.Tech. (Research).

2. if a referee in the report is not in a position to make a definite recommendation for the award of the degree, supervisor should be requested to get it corrected/implemented from the candidate as follows:

   a. Substantial revisions involving rewriting of one or more chapters without, however, doing any further Research work. Completely rewrite the dissertation, if the dissertation in the present form requires major improvement in quality and quantity of work to be carried out by the candidate and he/she has been given an opportunity for further Research work and/or reinterpretation of results within specified limit of maximum duration of M.Tech. (Research).

3. The copy of the referee's report when received shall be confidentially made available to the Supervisor(s). The supervisor(s) shall send comments to Dean (Academics) on these reports.

4. Dean (Academics) will submit the referee's reports and supervisor's comments to evaluation committee comprising of Dean (Academics) as Chairperson, one recognized supervisor (other than the supervisor(s) of the concerned students) from the department and one recognized supervisor from another department. Such committee should be constituted by Dean (Academics) in consultation with the Chairperson of the Senate in each case. This committee will recommend to the IAAC whether the dissertation be accepted for the viva-voce examination or be rejected or be referred again to a new referee after due corrections**.**

5. A dissertation may be considered acceptable for holding the viva-voce examination if the referee gives positive recommendations. If the dissertation is rejected, as it is, it shall be referred to a second referee chosen from the panel of examiners by the Chairperson, Senate.

6. Whenever a dissertation is referred to a second referee, the comments of the supervisor point by point for the queries by the first referee, reported to the evaluation committee, should be also sent to second referee.

7. The Senate shall be the final authority in conferring the degree to the candidate.

8. If the referee recommends acceptance of the dissertation subject to minor modifications only, the dissertation can be resubmitted only once after incorporating the modifications, within a period of three months. The dissertation so resubmitted shall be examined by the same referee.

9. A dissertation rejected by the referee may be re-submitted to second referee after revision, not earlier than one semester and not later than two semesters from the date of such intimation to the candidate by the IAAC.

10. Rejection of the dissertation so re-submitted will disqualify the candidate from further consideration for the award of the M.Tech. (Research) degree, in the topic of research chosen.

14.5.1.5 M.Tech. (Research) Final Viva-Voce Examination

1. A candidate, whose dissertation has been accepted for the award of the M.Tech. (Research) degree, shall be required to defend the work at an open viva-voce examination conducted by a Board of Examiners at the Institute.

2. The Board of Examiners shall be appointed by the Senate Chairperson and it shall consist of-

a. A professor of the Institute, outside the department as Chairperson,
b. The Research Supervisor(s).
c. One of the examiners from RPC or additional examiner of pre-synopsis to act as an internal examiner; and
d. One of the referees
e. In case the appointed referee is not available for viva voce examination, a referee from the approved panel can be requested for the examination after taking due approval of Senate Chairperson.

3. The Board of Examiners shall submit its report in the prescribed form to the Dean (Academics) within 3 days after completion of viva-voce exam.
4. After satisfactory completion of the viva-voce examination, the M.Tech. (Research) degree may be conferred upon the candidate after approval by the Senate.
5. If a dissertation has been accepted but the candidate fails at the viva-voce examination, he/she may be permitted by the Chairperson, Senate to re-appear for viva-voce examination again at a later date. The recommendations of the Board of Examiners conducting the viva-voce examination shall be considered in taking a decision in this respect.
6. After successful completion of the viva-voce examination, the candidate shall submit to the Academic Section two copies of the approved dissertation duly bound together with the application for submission of the same in the prescribed format.

14.6 Ph.D. Degree

A student shall be declared eligible for award of Ph.D. Degree if he/she has:

1. Completed all the Course Work and Seminar requirement for the degree with minimum CGPA 6.0.
2. Research work has been carried out within the Institute under the guidance of Supervisor(s) for a minimum duration of three years. This period includes Course work and Seminar also.
3. The thesis submitted by the candidate has been recommended for the award of the Ph.D. degree by two external referees and by the Board of Examiners (BOE) constituted for the viva-voce examination.
4. Defended the research work at an open viva-voce examination conducted by the BOE.
5. The award of Ph.D. degree must be recommended by the Senate.
6. Only those candidates will be considered for awarding the degrees whose results are declared one month prior to date of convocation.

14.6.1 Ph.D. Thesis Evaluation

Prior to the submission of the synopsis of the thesis, a comprehensive internal assessment of the research work should be made by a panel consisting of the RPC members and one or two faculty members, who are familiar with the concerned area of research work from the Institute, appointed by the Dean (Academic) in consultation with the Chairperson DAAC.

14.6.1.1 Ph.D. Pre-synopsis Submission

1. This assessment will be through a pre-synopsis seminar. The candidate can submit the synopsis only if the panel is satisfied about the quality of the work for submission as a PhD. thesis. The permission for conduct of Pre-synopsis shall be given only as and when the student

has acceptance of (i) minimum TWO Technical papers in Journals enlisted in SCI/SCI(E) (Clarivate Analytics) / Scopus/Web of Science (non-paid journal) or (ii) minimum TWO process / product patents granted or (iii) ONE Technical paper in Journals enlisted in SCI/SCI(E) (Clarivate Analytics) / Scopus/Web of Science (non-paid journal) and ONE process / product patent granted.

2. Conditional Pre-synopsis will not be allowed. It is suggested that PhD supervisor should arrange the conduct of Pre-synopsis seminar of the student, if draft PhD thesis is ready for submission. The student will incorporate the corrections suggested by the Pre-synopsis seminar committee in the PhD Thesis.
3. The period of validity of Ph.D. registration is seven years. The candidates may submit their thesis before the end of this period after successfully appearing in the pre-synopsis seminar and following synopsis submission within a time limit specified in the following clause.
4. Any candidate who concurrently registers for any other degree courses at another organization shall be automatically be de-registered at the Institute.
5. Research Scholars who have successfully delivered pre-synopsis seminar of the thesis may be permitted by IAAC on recommendations of the DAAC to leave the Institute and submit the thesis from outside within a period of six months provided they fulfill the provisions of all other rules.
6. Pre-synopsis Evaluation Committee comprising of
    a. Concerned Supervisor(s)
    b. Examiner nominated by the Supervisor(s)
    c. Examiner nominated by the DAAC Chairperson
    d. Examiner nominated by the Dean (Academics) from the panel of examiners who is familiar with the concerned area of research work forwarded by the DAAC Chairperson
    e. Chairperson for Pre-synopsis Evaluation Committee at associate professor or professor level nominated by DAAC Chairperson
7. Details of the pre-synopsis seminar shall be adequately notified so as to enable interested staff members and students to attend the same.
8. DAAC Chairperson shall forward the panel's report to the Dean (Academics).

14.6.1.2 Ph.D. Synopsis Submission

1. The synopsis is to be submitted within two months from the date of successful completion of pre-synopsis seminar. The candidate shall submit 2 hard copies and a soft copy of the synopsis of his/her work preferably one month before submitting the thesis to the Dean (Academics). The soft copy can be used for quick communications with the examiners.
2. If the synopsis is not submitted within two months from the date of successful completion of the pre-synopsis seminar, then the candidate has to apply for extension (of a maximum period of one month) to the Dean (Academics) through the supervisor and the Chairperson, DAAC.
3. In case the student, is not able to submit the synopsis in the extended period, the pre-synopsis given by the candidate be treated as Research Progress seminar and he/she has to appear for Pre-synopsis Seminar in current/next semester. The candidate has to complete his/her all Ph.D. requirement within the time limit specified.
4. The candidate can submit synopsis and thesis on the same day.

5. After satisfactory completion of pre-synopsis seminar, supervisor(s) will submit the proposed list of external referees along with synopsis of PhD Thesis to the Dean (Academic) of the Institute through HOD/Chairperson DAAC.

    a. The list should be consisting of complete addresses (including e-mail addresses and web links showing area of interest) of five members each from renowned universities/ research organizations abroad and well reputed institutes (IITs, IISCs, NITs, CSIR laboratories and centrally funded universities of India). The enlisting of few reputed state Universities with high ranking in NIRF (MoE) from India can be undertaken from whom the referees for Ph.D. panel can be invited.

    b. The panel of experts for a review of Ph.D. thesis will be verified and approved by examination committee at the end of Pre-synopsis seminar and will be forwarded to Dean (Academics). The Dean (Academics) upon his/her satisfaction shall forward it to the Director as the Senate Chairperson for selecting two external referees consisting of one each from India and abroad.

14.6.1.3 Ph.D. Thesis Submission

1. The scholar has to submit his/her thesis within six months from the day of submission of synopsis.
2. If a candidate does not submit his/her thesis within six months from the date of submission of synopsis, he has to apply for an extension (of a maximum period of TWO months) to the Dean (Academics) through the supervisor and the Chairperson, DAAC. The Dean (Academics) will present the same to the IAAC for approval. In such case, the student has to continue his/her registration during the extended period. If the candidate fails to submit the thesis within the extended period, then his/her registration will be deemed to be cancelled.
3. The copies of the synopsis will be forwarded by the Dean (Academic) to the Academic Section with the following certificates:
    a. Certificate from the Chairperson, DAAC that the prescribed course credits are completed.
    b. Copy of report from the Chairperson of the panel of examiners for pre-synopsis seminar.
    c. Certificate that the pre-synopsis seminar has been completed satisfactorily.
    d. Certificate from the Research Supervisor(s) stating:
        i. That there is a *prima facie* case for consideration of the thesis.
        ii. That the thesis does not contain any work which has been previously submitted for the award or any degree, and
        iii. The extent of collaboration, if any,
        iv. "No dues Certificate" from all Sections, Hostel and Library that there are no arrears/dues up to the date of submission of the synopsis.
4. The student is allowed to submit the thesis without payment of semester registration fee if he/she submits the thesis before the last date of next semester registration.
5. The thesis shall be written in English in the approved format (printed on both sides of the pages) and as per the broad guidelines.
6. The candidate shall submit two copies of the thesis and a soft copy within six months after submission of synopsis to the Academic Section within the prescribed time limit. Depending upon the preference of the examiner, either hard copy or soft copy can be sent to him/her.

7. The Ph.D. Thesis, at the end, should also consist of a declaration certificate as per the format approved in anti-plagiarism policy of the Institute.
8. Along with the thesis, the candidate shall submit the requisite forms containing the authorization from the Research Supervisor(s) for submission of the thesis and a certificate from Accounts Section that there are no dues against the candidate.

14.6.1.4 Ph.D. Thesis Review Report

1. The two referees shall independently report to the Dean (Academics), preferably within six weeks from the date of their receipt of the thesis (either hard copy or soft copy). The Deputy Registrar (Academics) while forwarding the Ph.D. thesis to the referees, should convey to them that their reports should include:
    a. A critical survey and evaluation of the quality and quantity of the work as embodied in the thesis.
    b. Questions, if any, to be asked or points to be clarified at the viva-voce examination, and
    c. A definite recommendation as to whether the thesis is acceptable for the award of the degree of Doctor of Philosophy.
2. The copies of the referees' reports when received shall be confidentially made available in sealed envelope to the research supervisor(s). The research supervisor(s) shall send comments to Dean (Academics) on these reports.
3. Dean (Academics) will submit the referee's reports and supervisor's comments to evaluation committee comprising of Dean (Academics) as Chairperson, one recognized supervisor (other than the supervisor(s) of the concerned students) from the parent department and one recognized supervisor from another department. Such committee should be constituted by Dean (Academics) in each case. This committee will recommend to the Chairperson Senate whether the thesis be accepted for the viva-voce examination or be rejected or be referred again to a new referee. If the thesis under evaluation is required to be sent back to the Indian / Foreigner referee (on his/her suggestion) for its perusal after due corrections by the candidate, the revised corrected and evaluated thesis need not be placed for further evaluation at the institute for ensuring incorporation of corrections by the candidate.
4. A thesis may be considered acceptable for holding the viva-voce examination if both the referees give positive recommendations.
5. If one of them accepts and the other rejects the thesis, the thesis as it is (in original form), shall be referred to a third referee chosen from the panel of examiners by the Senate Chairperson.
6. Whenever a thesis is referred to a third referee the comments of the research supervisor point by point for the queries by the first two referees should also be reported to the evaluation committee.
7. The Chairperson Senate shall, however, be the final authority in deciding whether the thesis be accepted for the award of the degree.
8. If the referees(s) recommend acceptance of the thesis subject to major modifications, only the thesis can be resubmitted only once after incorporating the modifications, within a period of six months. The thesis so resubmitted shall be examined by the same referee(s).

9. A thesis rejected by two referees may be re-submitted after revision, not earlier than one year and not later than two years from the date of such intimation to the candidate by the Dean (Academics). The thesis so resubmitted may be examined by the same referees or by new referees, as approved by the Chairperson Senate. The candidate has to pay a registration fee for one semester towards laboratory usage while working for resubmission of the thesis.
10. Rejection of the thesis so resubmitted as above will disqualify the candidate from further consideration for the award of the Ph. D. degree, in the topic of Ph.D. chosen by him/her.

14.6.1.5 Ph.D. Final Viva-Voce Examination

1. A candidate, whose thesis has been accepted for the award of the Ph.D. degree, shall be required to defend his/her work at an open viva-voce examination conducted by a Board of Examiners at the Institute. The permission for conducting the Ph.D. examination on video conference or other online mode, on exceptional cases be obtained from Chairperson Senate on case-to-case basis.
2. The Board of Examiners shall be appointed by the Senate Chairperson and it shall consist of-
    a. A professor of the Institute, outside the department as Chairperson nominated by Dean (Academics)
    b. The Research Supervisor(s).
    c. One of the examiners from RPC or additional examiner of pre-synopsis to act as an internal examiner appointed by Dean (Academics); and
    d. One of the referees
    e. In case the appointed referee is not available for Ph D viva voce examination, a referee from the approved panel can be requested for the examination after taking due approval of Senate Chairperson.
3. The Board of Examiners shall submit its report in the prescribed form to the Senate Chairperson within 3 days after completion of viva-voce exam.
4. After satisfactory completion of Viva voce exam, the degree may be conferred upon the candidate after approval by the Senate.
5. If a thesis has been accepted but the candidate fails at the viva-voce examination, he may be permitted by the Chairperson Senate to re-appear for viva-voce examination again at a later date. The recommendations of the Board of Examiners conducting the viva-voce examination shall be considered in taking a decision in this respect.
6. After successful completion of the viva-voce examination, the candidate shall submit to the Academic Section two copies of his approved thesis from the board of the examination along with the thesis submission application in the prescribed format.
7. Ph.D. final viva-voce examination of the candidate may be held online in case the external examiner is not able to conduct the examination in physical mode. Other members of Board of Examiners remain present in physical mode during the examination. In such cases, the permission should be obtained from Dean (Academics) on case-to-case basis.

15 ISSUANCE OF TRANSCRIPT

Transcript will be issued for any programme to the student after the pre-final year or final year of final degree. The student has to pay the charges as per the institute guidelines that will be published on the institute website.

16 DEGREE CERTIFICATE

The student has to submit the convocation form with details in prescribed format before the final semester examination of any programme. On completion of the degree requirement in the specified duration and no-due clearance from all sections of the institute, the student record will be placed in the senate and subsequently approved by the BoG. The BoG approval date is the date of degree awarding. The original certificate will be issued once. In case the student needs duplicate copy of the certificate, he/she has to apply paying the required charges.

17 ASSESSMENT OF SEMINAR / PROJECT / DISSERTATION

In this section guidelines for assessment of the seminar / project and internship at UG / PG level programmes are described.

17.1 B.Tech. / M.Tech. / M.Sc. Seminar Assessment

Seminar (if applicable) and Industrial Training (if applicable) assessment will be conducted as a course work. Head of each Department shall appoint one or two seminar coordinators depending on the class strength who in consultation with the other faculty members will prepare a list of seminar topics to be given to the students at the beginning of semester. The topics should be so selected as to require the students to refer to journals or advanced text books for preparation of the seminar. The faculty member proposing a seminar topic will normally be the supervisor for the seminar. On completion of the studies, the student shall submit two copies of the report, to the coordinator (one for the supervisor and one for the department) by the prescribed date and make oral presentation of his/her seminar topic in 15 to 20 minutes on scheduled date. The presentation shall be followed by discussions in which faculty members and the students will participate and seek response from the student. The seminar assessment will be initially made in terms of marks with 40 % weightage on the seminar report evaluated by the supervisor; the oral presentation and the response of the student in the discussion will be given 60 % weightage which will be individually awarded by a panel of three faculty members and the average taken. On compilation of the marks given on the report and the presentation, the coordinator(s) will convert the marks into grades and forward the same to the Academic Section.

17.2 B.Tech. Project Assessment

Project (if applicable) assessment will be conducted as a course work. Head of each Department shall appoint one or two project coordinators depending on the class strength who in consultation with the other faculty members will prepare a list of project topics to be given to the students at the beginning of semester. The allocation of projects, faculty supervisors and tentative plan of work are to be done before the beginning of the semester.

Number of students assigned a project work should, in general, be restricted to four. A committee of three examiners shall be appointed to evaluate the projects in addition to the concerned supervisors. The students are to be assessed on their initiative, interest, effort and regularity shown during the project work and in the preparation of the project report. This assessment will be made by the supervisor of 40 % weightage. The remaining 60 % weightage will be given on the average mark awarded by the three examiners based on the quality of the report, presentation of the project work and the performance in the oral examination. On compilation of the marks awarded by the supervisor and the board of examiners, the Chairperson of the committee will send the same to the Project coordinator(s) who will convert the marks into grades and forward to the Academic Section.

17.3 M.Tech. Dissertation Assessment

The Dissertation is to be carried out by the students independently during the 3rd and 4th semesters respectively. The work during the 4th semester is normally expected to be a continuation of the work of 3rd semester, except under those exceptional circumstances in

which the supervisor is changed at the end of 3rd semester. The grading will be done separately for the work done during the 3rd and 4th semesters. An 'II' grade may be awarded to dissertation work at the end of 3rd semester. The rules applicable for award of 'II' grade are described earlier.

The student is required to submit a dissertation report as a part of dissertation at the end of 4th semester. The evaluation of group of students working in a similar broad area will be carried out by a group of internal examiners consist of minimum three examiners including supervisor. The number of groups of students and examiners will be decided by the HoD based on specialization. Same group of internal examiners will evaluate the student dissertation work during 3rd and 4th semesters. Final dissertation report will be prepared by the student in prescribed format adopted by the department for evaluation.

This assessment will be made by the supervisor of 40 percent weightage. The remaining 60 percent weightage will be given on the average mark awarded by other internal examiners based on the quality of the report, presentation of the dissertation work, and the performance in the oral examination. On completion of assessment compilation of the marks awarded by the supervisor and the group of internal examiners, the supervisor will convert the marks into grades and forward the same to the Academic Section through PG-Incharge and HoD.

17.3.1 Dissertation Report Submission

The student can submit the final dissertation report after the last date of the teaching of 4th semester if supervisor approves the work done by the student.

The student whose final dissertation assessment is done and the result is declared before 31st July of a year will be awarded the degree certificate during the convocation of that year. Only provisional degree certificate will be awarded if the result is declared after 31st July.

Continuing the dissertation work and joining other organization permission will be granted to all the students due to employment in the last semester of the M.Tech. programme through necessary approval of Dean (Academics). The student shall apply for permission immediately to the Dean (Academics) through his/her department.

1. After the third semester and before the last date of the teaching of 4th semester of the M.Tech. programme. The student shall apply for permission immediately to the Dean (Academics) through his/her department. In this case if permitted, the duration of the dissertation would be of three semesters (i.e. one semester more than the regular student). That is, the student who has completed his/her 3rd semester regular as per the requirement, then two more semesters are required to fulfil the conditions of the M.Tech. programme. The student has to register in the even and odd semesters of the academic year and is required to pay full fees of the respective semesters. The dissertation thesis can be submitted after completion of total three semesters of dissertation as per the satisfaction of the concerned supervisor. The student will not be entitled for any stipend during the dissertation work.
2. After the last date of the teaching of 4th semester. If the student is availing the GATE scholarship, the scholarship will be stopped from the day he/she submit an application for permission after the last date of the teaching of 4th semester. The student has to submit the thesis as per the schedule mentioned in the Academic Calendar. If student is not able to submit the thesis as mentioned in the Academic Calendar, then he/she has to register for consecutive semesters and has to pay fees. The maximum duration of PG programme is 3 years, that is, 6 semesters, and in exceptional case it is 7 semesters as described earlier.

17.3.2 Industry Internship during PG dissertation

During the 2nd year of PG dissertation, industry-based internship is preferred such application should be routed through Career Development Cell of the institute.

In the 2nd year of PG programme, the student can pursue the internship maximum of 11 months duration in the industry. If the student is availing GATE scholarship / assistantship, for a duration of internship he/she will not be entitled to receive GATE scholarship / assistantship.

The number of students permitted and duration for such internship will be decided by the respective HoD through DAAC and it shall be approved by the IAAC Chairperson.

17.4 M.Sc. Dissertation Assessment

Dissertation is a core course in 5 Years Integrated M.Sc. programs. The Research Project / Dissertation is to be carried out by the students independently during the 9th and 10th semesters as part I and part II respectively. The work during the 10th semester is normally expected to be a continuation of the work of 9th semester, except under those exceptional circumstances in which the supervisor is changed at the end of 9th semester.

The grading will be done separately for the work done during the 9th and 10th semesters. The 'II' grade may be awarded to dissertation work at the end of 9th semester. The rules applicable for award of 'II' grade are mentioned earlier. The student is required to submit a dissertation as a part of research project / dissertation at the end of 10th semester.

For end-semester assessment of Dissertation Preliminaries at the end of the 9th semester and Dissertation at the end of 10th semester, for each M.Sc. programme, the evaluation process is as follows:

The evaluation of group of students working in a similar broad area will be carried out by a group of internal examiners consist of minimum three examiners including supervisor. The number of groups of students and examiners will be decided by the HoD based on specialization. Final dissertation report will be prepared by the student in prescribed format adopted by the department for evaluation.

This assessment will be made by the supervisor of 40 percent weightage. The remaining 60 percent weightage will be given on the average mark awarded by the other internal examiners based on the quality of the report, presentation of the dissertation work, and the performance in the oral examination. On completion of assessment compilation of the marks awarded by the supervisor and the group of internal examiners, the supervisor will convert the marks into grades and forward the same to the Academic Section through Faculty-Incharge and HoD.

17.5 Ph.D. Credit Seminar Assessment

The student will submit two copies of credit seminar report to his supervisor(s). The student shall make oral presentation on his/her seminar topic as per time schedule decided by his supervisor(s). The seminar will be assessed during this presentation by a committee comprising of

1. Concerned Supervisor(s)
2. Examiner nominated by the Supervisor(s)
3. Examiner nominated by the DAAC Chairperson

The credit seminar assessment will be initially made in terms of marks with 40 % weight age on the credit seminar report evaluated by the supervisor. The oral presentation and the response of the student in the discussion will be given 60 % weight age which will be awarded by the committee of examiners. On completion of assessment compilation of the marks given on the

report and the presentation, the supervisor will convert the marks into grades ad forward the same to the Academic Section.

If a student does not submit the Seminar report and/or does not present the Seminar on the scheduled date, he will be awarded 'FF' grade unless the department extends the date in exceptional circumstances.

All the students who have got 'FF' grade in Seminar be allowed to present Seminar afresh during the period of re-examination. In such a case the student should not be awarded a grade better than CC grade in the Seminar.

18 ASSESSMENT OF VOCATIONAL TRAINING / FIELD EXPERIENCE

The assessment mechanism for evaluating the vocational training / field experience is described in the ANNEXURE - Vocational Training and Professional Level Experiential Learning. The student can earn the credits through vocational training / field experience. The evaluation will be done by the respective department by the group of internal examiners depending upon the area. The group of internal examiners will be appointed by the HoD.

1. Student can register for only one Vocational training or Professional level experience (Field Experience) in one semester.
2. The registration for Vocational training or Professional level experience (Field Experience) will be submitted by the student in the department at the time of registration / beginning of the semester.
3. On successful completion of Vocational training or Professional level experience (Field Experience), the department will submit the registration form and evaluation form in the prescribed format mentioned in annexure to the academic section for inclusion of the Vocational training or Professional level experience (Field Experience) in MIS system and the earn credit will be assigned to the student which will be reflected in the SGPA and CGPA.
4. If the student is not able complete Vocational training or Professional level experience (Field Experience) that will not be entered into the MIS system and will not be reflected in to the SGPA and CGPA.
5. If the student register for Vocational training or Professional level experience (Field Experience) but not able to complete in current semester then he/she can continue the same in the next semester and on successful completion it can be processed as mentioned in point 3. This clause is not applicable to Industrial Internship in the final semester of UG programme.

19 COURSE FEEDBACK BY STUDENTS

Every course run in a semester is evaluated on the basis of feedback received from the students registered in that course. During the last week of a semester, the students shall give their feedback on the courses studied by them during the semester. The feedback system shall be computerized and coordinated by the MIS personnel. The compiled feedback reports shall be forwarded by the MIS personnel to the concerned Head of the Department who will scrutinize the same and may take appropriate steps to enhance the quality of teaching of the courses. If the feedback belongs to a subject handled by the Head of the Department, then the same shall be scrutinized by the Dean (Academics).

20 CONDUCT AND DISCIPLINE

The following acts shall constitute gross violation of the code of conduct and are liable to invoke disciplinary action.

1. Involvement in ragging in any form inside or outside the Institute premises. As per the order of the Hon'ble Supreme Court of India, ragging in any form is banned; acts of ragging will be considered as gross indiscipline and will be severely dealt with.
2. Furnishing false statement of any kind in the form of application for admission or for award of scholarship, etc.
3. Displaying lack of courtesy and decorum and resorting to indecent behavior anywhere within or outside the campus.
4. Willfully damaging, removing or stealing any property/belongings of the Institute, Hostel or fellow students.
5. Possession, consumption or distribution of alcoholic drinks or any kind of hallucinogenic drugs. Adoption of unfair means in the examinations.
6. Organizing or participating in any group activity in company with others inside or outside the campus without prior permission of concerned authorities.
7. Mutilation or unauthorized possession of library books.
8. Not intimating his/her absence to the Warden of the Hostel of residence.
9. Disturbing the academic atmosphere by playing games/sports in the academic area during the working hours.
10. Hacking the computer systems such as entering other person's area without prior permission, manipulation and/or damage of computer hardware and software or any other cybercrime, etc.
11. Students shall conduct themselves within and outside the premises of the Institute in a manner befitting the students of an Institution of National Importance.
12. Noisy and unseemly behavior, disturbing studies of fellow students.
13. The Sexual Harassment of women at workplace will be dealt by the Institute Level Complaint committee (ICC), as per 'The sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act 2013 (No.14 of 2013) issued by Ministry of Law and Justice dated April 24, 2013 and as per the Supreme Court of India Judgment in case of Visakha.
14. For an offence committed in (a) a hostel (b) a department or in a classroom and (c) elsewhere, the Chief Warden, the Head of the Department and the Dean (Student Welfare), respectively, shall have the authority to reprimand or impose fine or take any other suitable action.
15. All cases involving punishment other than reprimand shall be reported to the Chairperson, Students Disciplinary Committee constituted by the Director.
16. Cases of adoption of unfair means in an examination/malpractice shall be reported to the Dean (Academics) for taking appropriate action.
17. All students who reside in the hostels must abide by the rules and Regulations of the hostel as may be framed from time to time by the Council of Wardens and approved by the Senate.

Commensurate with the gravity of the offence, the punishment may be reprimand, fine, expulsion from the hostel of residence, debarment from an examination, rustication for a specified period or even outright expulsion from the Institute.

20.1 Institute Disciplinary Committee

All major acts of indiscipline, which may have serious repercussion on the students in general and/or which may warrant a uniform and more formalized nature of investigation, shall be handled by the Institute Disciplinary Committee appointed by Senate. The Disciplinary Committee shall consist of the following members:

(a) Dean (Academics): Chairperson

(b) Two members of faculty nominated by the Director for a term of two years: Members

(c) Deputy Registrar (Academics): Secretary

Recommendation of the committee, which will include the suggested punishment in cases where guilt is proven, will be forwarded to the Director for necessary action.

20.2 Examination Disciplinary Committee

Cases of adoption of unfair means in an examination shall be dealt with by Examination Disciplinary Committee consisting of the following members:

(a) Dean (Academics): Chairperson

(b) Head of the Department to which the reported Student belongs: Member

(c) One member of faculty nominated by the Director for a term of two years: Member

(d) Deputy Registrar (Academics): Secretary

The committee shall recommend appropriate measures in each case to the Director for awarding the punishment.

Following are the cases (a) and (b) are considered and appropriate examination disciplinary actions are described here in (c) and (d).

(a) Malpractice and unfair means reported in the Mid / End Semester Examination:

If any student is found involved in and malpractice and practice of unfair-means in the Mid Semester or End Semester Examination then

- The Invigilator is required to submit a detailed report to the Examination Co-coordinator / Dean (Academic) through the departmental examination Co-ordinator, regarding the nature of malpractice and / or Unfair-Means adopted by the student with relevant evidence (if any) with signature of the invigilators.
- The student shall be penalized and refrained from appearing in the examination in which he/she has been reported for malpractice and penal action may be initiated as per rule.
- The answer sheet with a copy of report is required to be sealed in a separate envelop and send to the Dean (academic) to be placed before the Examination Disciplinary Committee (EDC) for necessary decision and recommendation of action.

The details of punishment in different cases of malpractice and unfair-means are placed in points (c) and (d).

(b) Stay-out or Walk-out from Examinations

There shall be no re-examination, if student(s) STAY-OUT/WALK-OUT from the examination hall. However, in special circumstances the issue of re-examination of courses / subjects for

theory component and/or Practical component for student(s) who have STAYED-OUT or WALKED-OUT from the examination shall be decided by a Competent Committee constituted for this purpose.

If any re-examination is recommended, then that examination shall be treated as Re/Special Examination and relevant rules under the provisions of Special Examination shall be applicable.

(c) Provision of punishment for various possible cases of Unfair Means in End Semester/Supplementary Examination is as given below:

Category	Nature of Offence	Punishment
1	• Possession of any incriminating material inside the examination hall (whether used or not); For Example: written or printed materials, chits, writings on scale, calculator, hand kerchief, dress, part of the body and hall ticket etc., • Possession of cell phones, programmable calculator, recording apparatus or any unauthorized electronic equipment. • Copying from neighbor. • Exchange of question papers and other materials with some answers.	• Award 'O' marks in End Semester Examination and award 'FF" grade in that paper • Reduction of One Grade (but not lower than 'DD') in all the theory papers of that particular semester in which he/she appeared.
2	Substituting, replacing, changing or adding pages in the answer script supplied to the candidate, taking answer script outside the examination hall, tampering with material evidence, threatening the persons connected with the examination.	Cancellation of current Semester Examination and to debar the student from any Examination in the next one academic semester. After next academic semester, the student has to do fresh registration in the same semester and attend classes (i.e., re-admission in the same semester)
3	Cases of Impersonation	• Handing over the impersonator (outsider) to the police with a complaint to take action as per the law. • Cancelation of all examinations (all papers registered) for the bonafide student for whom the impersonation was done and further the bonafide student will be debarred from continuing his/her studies and writing all examinations for two years.

		• If a student of this institute is found to impersonate a bonafide student, the impersonating student will be debarred from his/her studies for two years.
4	Disruption of examination by slogans or Protest/ Strike, leading to cancellation of examination.	Cancellation of the Examination in that paper and reduction of one grade whenever such students appear in the cancelled paper(s).
5	Snatching or tearing of answer book of other examinees	Cancellation of current Examination.
6	Exhibiting Gross indiscipline	Disciplinary action and legal action may be initiated considering the seriousness of the offence.
7	Illegal activities by examinees.	Any or all of the aforesaid punishment, considering the seriousness of the offence.
8	Threats or assaults causing injury or use of force against persons connected with examination.	Cancellation of current Examination and to drop the student from the next three academic semester or he/she will be expelled from the Institute.

1. If a student is found to have been punished for adopting unfair means or unfair practice during two consecutive and semester examinations in an academic session then he/she will have to get readmitted in Odd/Even semester in which he/she had been punished earlier.
2. For any other type of malpractices reported, the Institute authority will decide appropriate punishment.
3. A student once punished under EDC shall not be eligible for award of any Institute, medal or any kind of award or character certificate in future.

(d) Provision of punishment for reported cases of Unfair Means in Mid Semester Examination is as given below:

The student will be awarded "00" (zero) in the subject in which he/she found adopting malpractice at the Mid Semester Examination. Any additional punishment would be decided by the concerned Department Level Examination Disciplinary Committee.

21 ACADEMIC ADVISORY COMMITTEE

The Senate of the Institute had approved to constitute Departmental Academic Advisory Committee (DAAC) and Institute Academic Advisory Committee (IAAC) for UG/M.Sc./PG/Ph.D. programmes as per Clause 8 (iv), (v) & (vi) of the First Statutes under NIT Act, 2007. The composition of the DAAC and IAAC is as detailed below:

21.1 Institute Academic Advisory Committee

The composition of Institute Academic Advisory Committee (IAAC):

1. Director: Chairperson
2. Registrar: Member
3. All Deans and Associate Deans: Members
4. All Heads of the Departments : Members
5. Dean (Academics): Member-Secretary

The IAAC shall perform the following functions and have the following powers:

1. The IAAC shall discuss all academic and allied matters including conduct of examination, appointment of examiners.
2. The IAAC shall review the working of the Departments.
3. The IAAC will make suitable recommendations for introducing new course(s), review/revision of existing syllabus and shall recommend to the Senate for approval.
4. The IAAC will plan co-curricular activities of the students of the Institute.
5. The IAAC will promote research and development activities with periodical review of the activities of the departments of the Institute.
6. The IAAC will review and consider the recommendations/minutes of every meeting of the DAACs and accordingly, will make suitable recommendations to the Senate.
7. The IAAC shall meet as often as necessary, but ordinarily not less than four times a year.
8. One-half of the members shall form a quorum for a meeting of IAAC.
9. A copy of recommendations/minutes of every meeting of the IAAC shall be placed before the Senate.

21.2 Department Academic Advisory Committee

The composition of the Departmental Academic Advisory Committee (DAAC) shall be as under:

1. Head of Department: Chairperson
2. All Faculty of the concerned Department: Members
3. Dean (Academics): Invitee-Member
4. Dean (Faculty Welfare): Invitee-Member
5. Dean (Research and Consultancy): Invitee-Member
6. Dean (Student Welfare): Invitee-Member
7. Industry Experts: Invitee-Member
8. Alumni and Student Parents: Invitee-Member
9. Senior most Assistant Professor of the Department or Faculty member nominated by the HoD: Member-Secretary

The DAAC shall perform the following functions and have the following powers:

1. The DAAC shall discuss the academic matters including introducing the new courses, review/revision of existing syllabus and shall recommend to the Institute Academic Advisory Committee for consideration and recommendation to the Senate for approval.

2. The DAAC shall meet as often as necessary, but ordinarily not less than four times a year.
3. One-half of the members shall form a quorum for a meeting of DAAC.
4. A copy of recommendations / minutes of every meeting of the DAAC shall be placed before the IAAC.

Review of question papers shall be done by the committee appointed at the department level. Result analysis shall be done at the Departmental Academic Advisory Committee (DAAC) meeting and the same shall be reported to the Institute Academic Advisory Committee (IAAC).

21.3 Academic Performance Review Committee

For weak students, the Senate of the Institute has constituted Academic Performance Review Committee (APRC). The constitution and functions of the APRC shall be as under:

Constitution

1. Dean (Academics): Chairperson
2. Heads of Departments: Members
3. Deputy Registrar (Academics): Member Secretary

Functions

1. To review the academic performances of weak students and assess the causes of unsatisfactory performance.
2. To advise weak students in order to improve their performance and to recommend an upper limit on the number of courses to be registered by such students in subsequent semesters.
3. To recommend termination of registration in case a student fails to satisfy the minimum academic criteria laid down for continuation as a student at the end of each year.
4. To perform any other function as may be entrusted to the committee by the Senate.

22 Institute Medals and Prizes

The institute offers Gold Medals to the topper of each UG and PG Programme. Dr. B. Majumdar, a former Director, has sponsored six Gold Medals in the memory of Shri Rajani Kumar Majumdar to the topper of each UG programme and one Gold Medal in the memory of Smt. Lakshmi Bala Majumdar to the overall topper at the undergraduate level. Siddhartha Gupta Foundation awards two Gold Medals of which one to the overall topper at the undergraduate level and the other to the topper of Mechanical Engineering. Dr. (Mrs.) Sheru S. Sopariwala has sponsored a Gold Medal in the memories of her husband and our beloved faculty member Late Mr. Sohrab S. Sopariwal to the topper of Electrical Engineering at the undergraduate level. Smt. Bhavani Narendrakumar Mehta has sponsored a Gold Medal to the topper of Computer Engineering. Our faculty Shri N. N. Patel of Civil Engineering has sponsored a Gold Medal in memory of his mother late Smt. Mahalaxmiben Natwarlal Patel to the topper of Civil Engineering. Also, our faculty Dr. M. A. Mulla of Electrical Engineering has sponsored Gold Medal to the topper at M.Tech. in Power Electronics and Electrical Drives. In addition to the above, the institute awards Dr. A. P. Verma Scholarship in Mathematics; Mr. Nishith Vijay Sampat Merit-based scholarship to the topper in Mechanical Engineering, and Mrs. & Mr. M. D. Desai cash prize to the topper of M.Tech. in Soil Mechanics and Foundation Engineering.

23 CONVOCATION

The Annual Convocation shall be conducted usually in the month of September or October. The Degrees will be awarded in person to the students who have graduated during the current academic year. Degrees will be awarded in absentia to such students who are unable to attend

the Convocation. Students are required to apply separately for the Convocation along with the prescribed fee.

24 Fee Refund Policy

In case, UG/M.Sc./PG/PhD students are not able to continue their studies due to some reason. They shall apply for cancellation of admission and a refund of registration fees. The following refund rules for UG/M.Sc./PG/PhD programmes, who have cancelled /discontinued / not reported to the Institute is followed.

Sr. No.	Withdrawn / discontinued	Amounts to be refunded
1	Students, who did not report for the admission	Excess amount if any will be refunded after deducting the tuition fees, other fees and admission fee
2	Students, withdrawn within one month of closing of admission	Institute development contribution+ security deposit + seat rent
3	Students, withdrawn after one month of closing of admission	Only security deposit

25 CONTACT US

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On Twitter:https://twitter.com/Media_SVNIT?ref_src=twsrc%5Etfw

ANNEXURE - Vocational Training and Professional Level Experiential Learning

Credit Earning

1. Registration by the Student – Intimation to the Department about Vocational Training and Professional Level Experiential Learning (Field Experience) - Annexure - I
2. Completion Report by the Student – Submitting a report to the Department about Vocational Training and Professional Level Experiential Learning (Field Experience) - Annexure – II
3. Evaluation Criteria - Annexure - III
4. Rubrics for Evaluation - Annexure – IV

National Education Policy incorporates learning based on Vocational Training and Experiential Learning (Field Experience). For inclusion of Vocational Training and Experiential Learning (Field Experience) in the curriculum system, the type, nature, evaluation strategy, and rubrics for such Vocational Training and Experiential Learning (Field Experience) must be designed so that the student can earn the credits which enable outcome-based implementation. In the connection, the mechanisms are described as follows.

Annexure – I

Registration by the Student about Vocational Training and Professional Level Experiential Learning (Field Experience)

Before the beginning of the semester – along with registration of courses of the semester

Academic Year	
Student Name	
Student Roll Number	
Department Name	
UG / PG Program	
Semester	
Organization / Institute Name	
Organization / Institute Address	
Nature of Learning (Vocational Training / Field Experience)	
List of Tasks expected under Training or Field Experience	
1	
2	
3	
4	
5	
Attachment	
Email, Letter from Organization or Institute, Registration Fee Receipt (if any)	
Signature of the Student	
Date of Registration (Intimation to Department)	
Signature of HoD or Department Faculty Coordinator	
Remarks by HoD or Department Faculty Coordinator on Evaluation Criteria out of 100 marks (Selection of mode and assessment mark at the time of registration)	
1 Written Mark at the time of completion	
2 Continuous Evaluation	
3 Practical assessment at the time of completion	
4 Presentation	
5 Viva	

Annexure – II

Completion Report by the Student about Vocational Training and Professional Level Experiential Learning (Field Experience)

Last week of December for ODD semester and June for EVEN semester)

Academic Year	
Student Name	
Student Roll Number	
Department Name	
UG / PG Program	
Semester	
Organization / Institute Name	
Organization / Institute Address	
Nature of Learning (Vocational Training / Field Experience)	
List of Tasks executed under Training or Field Experience	
1	
2	
3	
4	
5	
Attachment	
1 Certificate from Organization or Institute (if any)	
2 Report (Standard Format) consists of Work done with an introduction, literature survey, work or development done, simulation, and results depending upon the nature of Training or Field Experience	
Signature of the Student	
Date of Completion of Vocational Training or Field Experience	
Date of Report Submission to Department	
Signature of HoD or Department Faculty Coordinator	

Annexure – III

Department Evaluation of Vocational Training and Professional Level Experiential Learning (Field Experience)

Academic Year	
Student Name	
Student Roll Number	
Department Name	
UG / PG Program	
Semester	
Organization / Institute Name	
Organization / Institute Address	
Nature of Learning (Vocational Training / Field Experience)	
Evaluation as per Evaluation Criteria specified at the time of registration out of 100 marks depending upon the mode selected and assessment mark specified at the time of registration	
1 Written Mark	
2 Continuous Evaluation	
3 Practical assessment	
4 Presentation	
5 Viva	
Signature of the Student defending the evaluation process	
Date of Evaluation of Vocational Training or Field Experience	
Signature of HoD or Department Faculty Coordinator	

Annexure – IV

Rubrics for Evaluation of Vocational Training and Professional Level Experiential Learning (Field Experience)

Assessment Tool	Attributes and Mapping	Excellent	Good	Average
		H – High, M – Moderate, L – Less Correlated		
Knowledge (Basic Understanding)				
Design or Development				
Tools used in Work or Training				
Societal or Environment Problem Solving				
Project / Work Management based on Report				
Life Long Learning Attitude				
		(76% to 100%) of assessment mark	(51% to 75%) of assessment mark	(35% to 50%) of assessment mark
Written Examination				
Continuous Evaluation				
Presentation (Communication Skill)				
Viva				

सरदार वल्लभभाई राष्ट्रीय प्रौद्योगिकी संस्थान सूरत

Sardar Vallabhbhai National Institute of Technology (SVNIT) Surat
Department of Chemical Engineering
B.Tech. Chemical Engineering

Sr. No.	Subject	Code	Scheme L-T-P	Credits (Min.)	Notional hours of Learning (Approx.)
	First Semester (1st year of UG)				
1	Introduction to Chemical Engineering	CH101	3-1-0	4	70
2	Energy and Environment in Chemical Engineering	EG111	3-1-0	4	70
3	Mathematics	MA107	3-1-0	4	70
4	Engineering Drawing	ME110	2-0-4	4	100
5	Applied Chemistry	CY107	3-0-2	4	85
6	Workshop Practice	ME105	0-0-4	2	60
7	Indian Value System and Social Consciousness	HS120	2-0-0	2	35
			Total	**24**	**480**
8	Vocational Training / Professional Experience (Optional) (Mandatory for Exit)	CHV01 / CHP01	0-0-10	5	200 (20 x 10)
	Second Semester (1st year of UG)				
1	Process Calculations	CH102	3-1-0	4	70
2	Unit Processes	CH104	3-0-0	3	55
3	Fundamentals of Computer and Programming	CS110	3-0-2	4	85
4	English and Professional Communication	HS110	3-1-0	4	70
5	Numerical Methods in Chemical Engineering	CH106	3-1-0	4	70
			Total	**19**	**350**
6	Vocational Training / Professional Experience (Optional) (Mandatory for Exit)	CHV02 / CHP02	0-0-10	5	200 (20 x 10)
	Third Semester (2nd year of UG)				
1	Mechanical Operations	CH201	3-1-2	5	100
2	Fluid Flow Operations	CH203	3-1-2	5	100
3	Heat Transfer Operations	CH205	3-1-2	5	100
4	Mass Transfer Operations-I	CH207	3-1-0	4	70
5	Elective	CH2AA	3-X-X	3/4	55/70/85
			Total	**22-23**	**425-455**
6	Vocational Training / Professional Experience (Optional) (Mandatory for Exit)	CHV03 / CHP03	0-0-10	5	200 (20 x 10)
	Fourth Semester (2nd year of UG)				
1	Chemical Engineering Thermodynamics – I	CH202	3-1-0	4	70
2	Mass Transfer Operations – II	CH204	3-1-2	5	100
3	Chemical Reaction Engineering-I	CH206	3-1-2	5	100
4	Professional Ethics, Economics and Business Management	MG210	3-1-0	4	70
5	Elective	CH2BB	3-X-X	3/4	55/70/85
			Total	**21-22**	**395-425**
6	Minor / Honor (M/H#1)	CH2CC	3-X-X	4	70/85

Subject Code: ##nXX; ##: Department Identity, n: Year, XX: Subject Sequence number XX: last digit 0 (subject offered in both ODD and EVEN semesters, XX: 01 to 30 – last digit ODD and EVEN for ODD and EVEN semesters (Mandatory Core), XX: 31 to 50 (Optional Core), XX: 51 to 99 (Elective), Subjects list for Minor and Honor (M/H#1-4), Subjects list for Specialization track (#1-4) EG: Engineering Subject, SC: Science Subject (offered combinedly by departments) (SVNIT Surat)

Sardar Vallabhbhai National Institute of Technology (SVNIT) Surat
Department of Chemical Engineering
B.Tech. Chemical Engineering

7	Vocational Training / Professional Experience (Optional) (Mandatory for Exit)	CHV04 / CHP04	0-0-10	5	200 (20 x 10)
	Fifth Semester (3rd year of UG)				
1	General Chemical Technology	CH301	4-0-2	5	100
2	Chemical Engineering Thermodynamics – II	CH303	3-1-0	4	70
3	Chemical Reaction Engineering – II	CH305	3-1-0	4	70
4	Elective	CH3AA	3-X-X	3/4	55/70/85
5	Elective (Specialization#1)	CH3BB	3-X-X	3/4	55/70/85
6	Seminar	CH307	0-0-2	1	40
			Total	**20-22**	**390-450**
7	Minor / Honor (M/H#2)	CH3CC	3-X-X	4	70/85
8	Vocational Training / Professional Experience (Optional) (Mandatory for Exit)	CHV05 / CHP05	0-0-10	5	200 (20 x 10)
	Sixth Semester (3rd year of UG)				
1	Instrumentation and Process Control	CH302	3-1-2	5	100
2	Process Equipment Design	CH304	3-1-0	4	70
3	Chemical Engineering Plant Design and Economics	CH306	3-0-0	3	55
4	Elective	CH3DD	3-X-X	3/4	55/70/85
5	Elective (Specialization#2)	CH3EE	3-X-X	3/4	55/70/85
6	Project-I	CH308	0-0-4	2	60
			Total	**20-22**	**395-455**
7	Minor / Honor (M/H#3)	CH3FF	3-X-X	4	70/85
8	Vocational Training / Professional Experience (Optional) (Mandatory for Exit)	CHV06 / CHP06	0-0-10	5	200 (20 x 10)
	Seventh Semester (4th year of UG)				
1	Process Modelling and Simulation	CH401	3-1-2	5	100
2	Elements of Transport Phenomena	CH403	3-1-0	4	70
3	Innovation Incubation and Entrepreneurship	MG110	3-1-0	4	70
4	Elective (Specialization#3)	CH4AA	3-X-X	3/4	55/70/85
5	Elective (Specialization#4)	CH4BB	3-X-X	3/4	55/70/85
6	Project-II	CH405	0-0-4	2	60
			Total	**21-23**	**410-470**
7	Minor / Honor (M/H#4)	CH4CC	3-X-X	4	70/85
8	Vocational Training / Professional Experience (Optional) (Mandatory for Exit)	CHV07 / CHP07	0-0-10	5	200 (20 x 10)
	Eighth Semester (4th year of UG)				
1	Industrial Internship / Professional Experience (Mandatory)	CHP08	0-0-40	20	800 (20 x 40)
			Total	**20**	**800**

Subject Code: ##nXX; ##: Department Identity, n: Year, XX: Subject Sequence number XX: last digit 0 (subject offered in both ODD and EVEN semesters, XX: 01 to 30 – last digit ODD and EVEN for ODD and EVEN semesters (Mandatory Core), XX: 31 to 50 (Optional Core), XX: 51 to 99 (Elective), Subjects list for Minor and Honor (M/H#1-4), Subjects list for Specialization track (#1-4) EG: Engineering Subject, SC: Science Subject (offered combinedly by departments) (SVNIT Surat)

Sardar Vallabhbhai National Institute of Technology (SVNIT) Surat
Department of Chemical Engineering
B.Tech. Chemical Engineering

Sr. No.	Elective	Code	Scheme L-T-P
1.	Introduction to Engineering Statistics	CH251	3-0-0
2.	Electrochemistry and Energy	CH252	3-0-0
3.	Computational Heat Transfer and Fluid Flow	CH253	3-0-0
4.	Polymer Engineering	CH254	3-0-0
5.	Corrosion Science and Engineering	CH255	3-0-0
6.	Material Science and Technology	CH256	3-0-0
7.	Bioprocess Engineering	CH351	3-0-0
8.	Fuel and Combustion	CH352	3-0-0
9.	Cleaner Technologies in Chemical Process Industries	CH353	3-0-0
10.	Fundamentals of Colloid and Interfacial Science	CH354	3-0-0
11.	Petroleum Refinery Engineering	CH355	3-0-0
12.	Waste to Energy Conversion	CH356	3-0-0
13.	Biomass Conversion and Biorefinery	CH357	3-0-0
14.	Heterogeneous Catalysis	CH358	3-0-0
15.	Micro Process Engineering	CH359	3-0-0
16.	Safety and Pollution Control	CH360	3-0-0
17.	New Separation Techniques	CH361	3-0-0
18.	Computational Fluid Dynamics	CH362	3-0-0
20.	Process Plant Safety	CH451	3-0-0
21.	Sustainability, Green Chemistry and Engineering	CH452	3-0-0
22.	Pharmaceutical Technology	CH453	3-0-0
23.	Computer Aided Design in Chemical Engineering	CH454	3-0-0

Subject Code: ##nXX; ##: Department Identity, n: Year, XX: Subject Sequence number XX: last digit 0 (subject offered in both ODD and EVEN semesters, XX: 01 to 30 – last digit ODD and EVEN for ODD and EVEN semesters (Mandatory Core), XX: 31 to 50 (Optional Core), XX: 51 to 99 (Elective), Subjects list for Minor and Honor (M/H#1-4), Subjects list for Specialization track (#1-4) EG: Engineering Subject, SC: Science Subject (offered combinedly by departments) (SVNIT Surat)

Sardar Vallabhbhai National Institute of Technology (SVNIT) Surat
Department of Civil Engineering
B.Tech. Civil Engineering

Sr. No.	Subject	Code	Scheme L-T-P	Credits (Min.)	Notional hours of Learning (Approx.)
	First Semester (1st year of UG)				
1	Engineering Graphics	CE101	2-0-4	4	100
2	Surveying-I	CE103	3-1-2	5	100
3	Environmental Pollution and Management	CE105	3-0-0	3	55
4	Mathematics-I	MA109	3-1-0	4	70
5	English and Professional Communication	HS110	3-1-0	4	70
			Total	**20**	**395**
6	Vocational Training / Professional Experience (Optional) (Mandatory for Exit)	CEV01 / CEP01	0-0-10	5	200 (20 x 10)
	Second Semester (1st year of UG)				
1	Mechanics of Materials	CE102	3-0-2	4	85
2	Building Technology	CE104	3-0-2	4	85
3	Material Science	CY108	3-0-2	4	85
4	Mathematics II	MA108	3-1-0	4	70
5	Innovation, Incubation and Entrepreneurship	MG110	3-1-0	4	70
6	Indian Value System and Social Consciousness	HS120	2-0-0	2	35
			Total	**22**	**430**
7	Vocational Training / Professional Experience (Optional) (Mandatory for Exit)	CEV02 / CEP02	0-0-10	5	200 (20 x 10)
	Third Semester (2nd year of UG)				
1	Hydraulic Engineering	CE201	3-1-2	5	100
2	Environmental Engineering	CE203	3-1-2	5	100
3	Building & Town Planning	CE231	3-1-2	5	100
4	Surveying II	CE207	3-1-2	5	100
5	Elective	CE2AA	3-X-X	3/4	55/70/85
			Total	**23-24**	**455**
	Fourth Semester (2nd year of UG)				
1	Concrete Technology	CE202	3-0-2	4	85
2	Highway Materials & Construction	CE204	3-0-2	4	85
3	Soil Mechanics	CE232	3-1-2	5	100
4	Elementary Structural Mechanics	CE206	3-0-2	4	85
5	Elective	CE2BB	3-X-X	3/4	55/70/85
			Total	**20-21**	**410-440**
6	Minor / Honor (M/H#1)	CE2CC	3-X-X	4	70/85
7	Vocational Training / Professional Experience (Optional) (Mandatory for Exit)	CEV04 / CEP04	0-0-10	5	200 (20 x 10)
	Fifth Semester (3rd year of UG)				
1	Design of Steel Structures	CE301	3-0-2	4	85
2	Structural Analysis	CE303	3-1-2	5	100
3	Transport System Design	CE305	3-1-0	4	70

Subject Code: ##nXX; ##: Department Identity, n: Year, XX: Subject Sequence number XX: last digit 0 (subject offered in both ODD and EVEN semesters, XX: 01 to 30 – last digit ODD and EVEN for ODD and EVEN semesters (Mandatory Core), XX: 31 to 50 (Optional Core), XX: 51 to 99 (Elective), Subjects list for Minor and Honor (M/H#1-4), Subjects list for Specialization track (#1-4) EG: Engineering Subject, SC: Science Subject (offered combinedly by departments) (SVNIT Surat)

Sardar Vallabhbhai National Institute of Technology (SVNIT) Surat
Department of Civil Engineering
B.Tech. Civil Engineering

4	Elective	CE3AA	3-X-X	3/4	55/70/85
5	Elective (Specialization#1)	CE3BB	3-X-X	3/4	55/70/85
			Total	**19-21**	**365-425**
6	Minor / Honor (M/H#2)	CE3CC	3-X-X	4	70/85
	Sixth Semester (3rd year of UG)				
1	Estimation & Cost Analysis	CE331	3-0-2	4	85
2	Water Resources Engineering	CE302	3-1-2	5	100
3	Design of Concrete Structures	CE332	3-1-2	5	100
4	Elective	CE3AA	3-X-X	3/4	55/70/85
5	Elective (Specialization#2)	CE3BB	3-X-X	3/4	55/70/85
			Total	**20-22**	**395-455**
6	Minor / Honor (M/H#3)	CE3CC	3-X-X	4	70/85
7	Vocational Training / Professional Experience (Optional) (Mandatory for Exit)	CEV06 / CEP06	0-0-10	5	200 (20 x 10)
	Seventh Semester (4th year of UG)				
1	Construction Project Management	CE401	3-1-0	4	70
2	Elective	CE4AA	3-X-X	4	70/85
3	Elective	CE4BB	3-X-X	4	70/85
4	Elective (Specialization#3)	CE4CC	3-X-X	4	70/85
5	Elective (Specialization#4)	CE4DD	3-X-X	4	70/85
			Total	**20**	**350-410**
6	Minor / Honor (M/H#4)	CE4EE	3-X-X	4	70/85
	Eighth Semester (4th year of UG)				
1	Industrial Internship / Professional Experience (Mandatory)	CEP08	0-0-40	20	800 (20 x 40)
			Total	**20**	**800**

Sr. No.	**Optional Core**	**Code**	**Scheme L-T-P**
1	Building & Town Planning	CE231	3-0-2
2	Soil Mechanics	CE232	3-1-2
3	Estimation & Cost Analysis	CE332	3-0-2
4	Design of Concrete Structures	CE334	3-0-2

Sr. No.	**Elective**	**Code**	**Scheme L-T-P**
1	Engineering Geology	CE251	3-0-0
2	Railway Engineering	CE252	3-1-0
3	Airport Planning	CE253	3-1-0
4	Town Planning	CE254	3-0-0
5	Sustainable Building Planning	CE255	3-0-0
6	Building Maintenance	CE256	3-0-0
7	Environmental Management	CE257	3-0-0
8	Advanced Surveying	CE258	3-1-0

Subject Code: ##nXX; ##: Department Identity, n: Year, XX: Subject Sequence number XX: last digit 0 (subject offered in both ODD and EVEN semesters, XX: 01 to 30 – last digit ODD and EVEN for ODD and EVEN semesters (Mandatory Core), XX: 31 to 50 (Optional Core), XX: 51 to 99 (Elective), Subjects list for Minor and Honor (M/H#1-4), Subjects list for Specialization track (#1-4) EG: Engineering Subject, SC: Science Subject (offered combinedly by departments) (SVNIT Surat)

Sardar Vallabhbhai National Institute of Technology (SVNIT) Surat
Department of Civil Engineering
B.Tech. Civil Engineering

9	Channel Hydraulics	CE259	3-1-0
10	Numerical Methods for Engineers	ME359	3-0-0
11	Renewable Energy	ME353	3-0-0
12	Optimization Methods	EE254	3-0-0
13	Fundamentals of Computer Programming	CS110	3-0-2
14	Geospatial Techniques	CE351	3-1-0
15	Advanced Geotechnical Engineering	CE352	3-1-0
16	Urban Transport Planning	CE353	3-1-0
17	Advanced Concrete Technology	CE354	3-1-0
18	Ground Engineering	CE355	3-1-0
19	Air Pollution and Control	CE356	3-1-0
20	Housing	CE357	3-1-0
21	Solid and Hazardous Waste Management	CE358	3-1-0
22	Climate Change Studies	CE359	3-1-0
23	Stochastic Hydrology	CE360	3-1-0
24	Advanced Hydrologic Analysis	CE361	3-1-0
25	Urban Infrastructure Planning & Management	CE362	3-0-2
26	Public Transport Planning	CE363	3-1-0
27	Pavement Construction & Evaluation	CE364	3-0-2
28	Ground Improvement Techniques	CE365	3-1-0
29	Soil Exploration & Field Tests	CE367	3-1-0
30	Industrial Waste Management	CE368	3-1-0
31	Transportation Safety & Environment	CE369	3-1-0
32	Highway Geometric Design	CE370	3-1-0
33	Building Information Modelling	CE371	3-0-2
34	Environmental Ethics, law & Policy	CE372	3-1-0
35	Intelligent transport System	CE373	3-1-0
36	Traffic Engineering & Management	CE374	3-0-2
37	Pavement Analysis & Design	CE375	3-1-0
38	Heavy Construction Technology	CE376	3-1-0
39	GPS & applications	CE377	3-1-0
40	Introduction to Earthquake Geotechnical Engineering	CE378	3-1-0
41	B.Tech. Project-I	CE379	0-0-8
42	Water Supply Distribution Systems	CE380	3-1-0
43	Design of Storm and Sewerage Network	CE381	3-1-0
44	Hydraulics of Alluvial Rivers	CE382	3-1-0
45	Ground Water Engineering	CE383	3-1-0
46	Integrated Watershed Management	CE384	3-1-0
47	Irrigation & Drainage System	CE385	3-1-0
48	Water Infrastructure for Smart Cities	CE386	3-1-0
49	Design of Pre-stressed Concrete Structures	CE387	3-1-0
50	Professional Ethics, Economics and Business Management	MG210	3-1-0
51	Hydropower Engineering	CE451	3-1-0
52	Industrial Safety and Environment	CE452	3-1-0
53	Environmental Health and Risk Analysis	CE453	3-1-0

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Sardar Vallabhbhai National Institute of Technology (SVNIT) Surat
Department of Civil Engineering
B.Tech. Civil Engineering

54	Waste to Energy Technologies	CE454	3-1-0
55	Environmental Legislation and Impact Assessment	CE455	3-1-0
56	Geosynthetic & Reinforced Soil Structure	CE456	3-1-0
57	Rock Mechanics	CE457	3-1-0
58	Advanced Foundation Engineering	CE458	3-1-0
59	Structural Vibration Control	CE459	3-1-0
60	Rehabilitation of Concrete Structures	CE460	3-1-0
61	Experimental Stress Analysis	CE461	3-1-0
62	Advanced Design of Concrete Structures	CE462	3-1-0
63	Earthquake Resistant Design of Structures	CE463	3-1-0
64	Design of Bridge Structures	CE464	3-1-0
65	Construction Safety Management	CE465	3-1-0
66	Introduction to Finite Element Method	CE466	3-1-0
67	Remote Sensing & Image Processing	CE467	3-0-2
68	Fundamentals of GIS	CE468	3-0-2
69	Regional Planning	CE469	3-1-0
70	Real Estate Management	CE470	3-1-0
71	Design of Formwork	CE471	3-1-0
72	Metro Construction technology	CE472	3-1-0
73	Traffic Flow Theory	CE473	3-1-0
74	Hydraulics of Alluvial Rivers	CE474	3-1-0
75	Computational Hydraulics	CE475	3-1-0
76	Construction Laws	CE476	3-1-0
77	Professional Practice	CE477	3-1-0
78	Advanced Construction Technology	CE478	3-1-0
79	Transport Economics	CE479	3-1-0
80	Operation and Maintenance Management of Pavements	CE480	3-1-0
81	Urban Design & Landscape Planning	CE481	3-0-2
82	Smart Cities Planning & Management	CE482	3-1-0
83	Non-liner Analysis of Frame Buildings	CE483	3-1-0
84	Introduction to Wind Engineering	CE484	3-1-0
85	B.Tech. Project-II	CE485	0-0-8
86	Advanced Hydraulic Structures	CE486	3-1-0
87	Flood Control and River Training Works	CE487	3-1-0
88	Advanced Water and Wastewater Treatment	CE488	3-1-0
89	Computer Aided Design of Structures	CE489	3-1-0
90	Design of Industrial Structures	CE490	3-1-0

Subject Code: ##nXX; ##: Department Identity, n: Year, XX: Subject Sequence number XX: last digit 0 (subject offered in both ODD and EVEN semesters, XX: 01 to 30 – last digit ODD and EVEN for ODD and EVEN semesters (Mandatory Core), XX: 31 to 50 (Optional Core), XX: 51 to 99 (Elective), Subjects list for Minor and Honor (M/H#1-4), Subjects list for Specialization track (#1-4) EG: Engineering Subject, SC: Science Subject (offered combinedly by departments) (SVNIT Surat)

Sardar Vallabhbhai National Institute of Technology (SVNIT) Surat
Department of Computer Science and Engineering
B.Tech. Computer Science and Engineering

Sr. No.	Subject	Code	Scheme L-T-P	Credits (Min.)	Notional hours of Learning (Approx.)
	First Semester (1st year of UG)				
1	Introduction to Computer Science	CS101	3-1-0	4	70
2	Introduction to Programming	CS103	3-0-2	4	85
3	Electrical Network Analysis	EE103	3-0-2	4	85
4	English and Professional Communication	HS110	3-1-0	4	70
5	Fundamentals of Engineering Mathematics	MA105	3-1-0	4	70
			Total	**20**	**380**
6	Vocational Training / Professional Experience (Optional) (Mandatory for Exit)	CSV01 / CSP01	0-0-10	5	200 (20 x 10)
	Second Semester (1st year of UG)				
1	Data Structures	CS102	3-1-2	5	100
2	Web Programming and Python	CS104	3-0-2	4	85
3	Digital Electronics and Logic Design	EC106	3-0-2	4	85
4	Energy and Environmental Engineering	EG110	3-0-2	4	85
5	Linear Algebra and Statistics	MA106	3-1-0	4	70
6	Indian Value System and Social Consciousness	HS120	2-0-0	2	35
			Total	**22**	**460**
7	Vocational Training / Professional Experience (Optional) (Mandatory for Exit)	CSV02 / CSP02	0-0-10	5	200 (20 x 10)
	Third Semester (2nd year of UG)				
1	Computer Organization	CS201	3-1-0	4	70
2	Database Management Systems	CS203	3-0-2	4	85
3	Design and Analysis of Algorithms	CS205	3-1-0	4	70
4	Discrete Mathematics	CS207	3-1-0	4	70
5	Object Oriented Programming	CS231	3-0-2	4	85
			Total	**20**	**380**
	Fourth Semester (2nd year of UG)				
1	Microprocessor and Interfacing Techniques	CS202	3-0-2	4	85
2	Operating Systems	CS204	3-0-2	4	85
3	Automata and Formal Languages	CS206	3-1-0	4	70
4	Computer Networks	CS208	3-0-2	4	85
5	Information Security and Cryptography	CS232	3-0-2	4	85
			Total	**20**	**410**
6	Minor / Honor (M/H#1)	CS2CC	3-X-X	4	70/85
7	Vocational Training / Professional Experience (Optional) (Mandatory for Exit)	CSV04 / CSP04	0-0-10	5	200 (20 x 10)
	Fifth Semester (3rd year of UG)				
1	System Software	CS301	3-0-2	4	85
2	Machine Learning	CS331	3-0-2	4	85

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Sardar Vallabhbhai National Institute of Technology (SVNIT) Surat
Department of Computer Science and Engineering
B.Tech. Computer Science and Engineering

3	Professional Ethics, Economics and Business Management	MG210	3-1-0	4	70
4	Elective	CS3AA	3-X-X	3/4	55/70/85
5	Elective (Specialization#1)	CS3BB	3-X-X	3/4	55/70/85
			Total	**18-20**	**350-410**
6	Minor / Honor (M/H#2)	CS3CC	3-X-X	4	70/85
	Sixth Semester (3rd year of UG)				
1	Artificial Intelligence	CS332	3-0-2	4	85
2	Distributed Computing	CS333	3-0-2	4	85
3	Innovation, Incubation and Entrepreneurship	MG110	3-1-0	4	70
4	Elective	CS3DD	3-X-X	3/4	55/70/85
5	Elective (Specialization#2)	CS3EE	3-X-X	3/4	55/70/85
			Total	**18-20**	**350-410**
6	Minor / Honor (M/H#3)	CS3FF	3-X-X	4	70/85
7	Vocational Training / Professional Experience (Optional) (Mandatory for Exit)	CSV06 / CSP06	0-0-10	5	200 (20 x 10)
	Seventh Semester (4th year of UG)				
1	Cyber Physical Systems	CS431	3-0-2	4	85
2	Elective	CS4AA	3-X-X	3/4	55/70/85
3	Elective	CS4BB	3-X-X	3/4	55/70/85
4	Elective (Specialization#3)	CS4CC	3-X-X	3/4	55/70/85
5	Elective (Specialization#4)	CS4DD	3-X-X	3/4	55/70/85
			Total	**16-20**	**305-425**
6	Minor / Honor (M/H#4)	CS4EE	3-X-X	4	70/85
	Eighth Semester (4th year of UG)				
1	Industrial Internship / Professional Experience (Mandatory)	CSP08	0-0-40	20	800 (20 x 40)
			Total	**20**	**800**

Sr. No.	**Optional Core**	**Code**	**Scheme L-T-P**
1	Object Oriented Programming	CS231	3-0-2
2	Information Security and Cryptography	CS232	3-0-2
3	Machine Learning	CS331	3-0-2
4	Artificial Intelligence	CS332	3-0-2
5	Distributed Computing	CS333	3-0-2
6	Cyber Physical Systems	CS431	3-0-2

Sr. No.	**Elective**	**Code**	**Scheme L-T-P**
1	Software Engineering	CS351	3-0-2
2	Modern Cryptography	CS352	3-1-0
3	Unmanned Aerial Vehicle Technology	CS353	3-0-2
4	Data Structures and Algorithms	CS354	3-0-2

Subject Code: ##nXX; ##: Department Identity, n: Year, XX: Subject Sequence number XX: last digit 0 (subject offered in both ODD and EVEN semesters, XX: 01 to 30 – last digit ODD and EVEN for ODD and EVEN semesters (Mandatory Core), XX: 31 to 50 (Optional Core), XX: 51 to 99 (Elective), Subjects list for Minor and Honor (M/H#1-4), Subjects list for Specialization track (#1-4) EG: Engineering Subject, SC: Science Subject (offered combinedly by departments) (SVNIT Surat)

Sardar Vallabhbhai National Institute of Technology (SVNIT) Surat
Department of Computer Science and Engineering
B.Tech. Computer Science and Engineering

5	Network Security	CS355	3-0-2
6	Social Network Analysis	CS356	3-0-2
7	High Performance Computing	CS357	3-0-2
8	Unmanned Aerial Vehicles Information Systems	CS358	3-0-2
9	Computer Networks for minor degree	CS359	3-0-2
10	Blockchain Technology	CS360	3-0-2
11	Data Science	CS361	3-0-2
12	Cyber Laws and Forensic Tools	CS451	3-0-2
13	Big Data Analytics	CS452	3-0-2
14	Unmanned Aerial Vehicles Forensics	CS453	3-0-2
15	Software Security and Defensive Programming	CS454	3-0-2
16	System Analysis and Simulation	CS455	3-0-2
17	Introduction to Operating Systems	CS456	3-0-2
18	Security in Cyber Physical Systems	CS457	3-0-2
19	Deep Learning	CS458	3-0-2
20	Cyber Physical Systems for Minor degree	CS459	3-0-2
21	Machine Learning for Security	CS460	3-0-2
22	Natural Language Processing	CS461	3-0-2

Subject Code: ##nXX; ##: Department Identity, n: Year, XX: Subject Sequence number XX: last digit 0 (subject offered in both ODD and EVEN semesters, XX: 01 to 30 – last digit ODD and EVEN for ODD and EVEN semesters (Mandatory Core), XX: 31 to 50 (Optional Core), XX: 51 to 99 (Elective), Subjects list for Minor and Honor (M/H#1-4), Subjects list for Specialization track (#1-4) EG: Engineering Subject, SC: Science Subject (offered combinedly by departments) (SVNIT Surat)

Sardar Vallabhbhai National Institute of Technology (SVNIT) Surat
Department of Artificial Intelligence
B.Tech. Artificial Intelligence

Sr. No.	Subject	Code	Scheme L-T-P	Credits (Min.)	Notional hours of Learning (Approx.)
	First Semester (1st year of UG)				
1	Introduction to Computer Science	AI101	3-1-0	4	70
2	Introduction to Programming	AI103	3-0-2	4	85
3	English and Professional Communication	HS110	3-1-0	4	70
4	Electrical Network Analysis	EE103	3-0-2	4	85
5	Fundamentals of Engineering Mathematics	MA105	3-1-0	4	70
			Total	**20**	**380**
6	Vocational Training / Professional Experience (Optional) (Mandatory for Exit)	AIV01 / AIP01	0-0-10	5	200 (20 x 10)
	Second Semester (1st year of UG)				
1	Data Structures	AI102	3-1-2	5	100
2	Web Programming and Python	AI104	3-0-2	4	85
3	Energy and Environmental Engineering	EG110	3-0-2	4	85
4	Linear Algebra and Statistics	MA106	3-1-0	4	70
5	Digital Electronics and Logic Design	EC106	3-0-2	4	85
6	Indian Value System and Social Consciousness	HS120	2-0-0	2	35
			Total	**23**	**460**
7	Vocational Training / Professional Experience (Optional) (Mandatory for Exit)	AIV02 / AIP02	0-0-10	5	200 (20 x 10)
	Third Semester (2nd year of UG)				
1	Computer Organization	AI201	3-1-0	4	70
2	Database Management Systems	AI203	3-0-2	4	85
3	Design and Analysis of Algorithms	AI205	3-1-0	4	70
4	Discrete Mathematics	AI207	3-1-0	4	70
5	Object Oriented Programming	AI231	3-0-2	4	85
			Total	**20**	**380**
	Fourth Semester (2nd year of UG)				
1	Artificial Intelligence	AI202	3-0-2	4	85
2	Operating Systems	AI204	3-0-2	4	85
3	Automata and Formal Languages	AI206	3-1-0	4	70
4	Computer Networks	AI208	3-0-2	4	85
5	Microprocessor and Interfacing Techniques	AI232	3-0-2	4	85
			Total	**20**	**410**
6	Minor / Honor (M/H#1)	AI2AA	3-X-X	3/4	55/70/85
7	Vocational Training / Professional Experience (Optional) (Mandatory for Exit)	AIV04 / AIP04	0-0-10	5	200 (20 x 10)
	Fifth Semester (3rd year of UG)				
1	Machine Learning	AI301	3-0-2	4	85
2	Data Science	AI303	3-0-2	4	85
3	Information Security and Cryptography	AI331	3-0-2	4	85

Subject Code: ##nXX; ##: Department Identity, n: Year, XX: Subject Sequence number XX: last digit 0 (subject offered in both ODD and EVEN semesters, XX: 01 to 30 – last digit ODD and EVEN for ODD and EVEN semesters (Mandatory Core), XX: 31 to 50 (Optional Core), XX: 51 to 99 (Elective), Subjects list for Minor and Honor (M/H#1-4), Subjects list for Specialization track (#1-4) EG: Engineering Subject, SC: Science Subject (offered combinedly by departments) (SVNIT Surat)

Sardar Vallabhbhai National Institute of Technology (SVNIT) Surat
Department of Artificial Intelligence
B.Tech. Artificial Intelligence

	(Optional Core)				
4	Elective	AI3AA	3-X-X	3/4	55/70/85
5	Elective (Specialization#1)	AI3BB	3-X-X	3/4	55/70/85
			Total	**18-20**	**365-425**
6	Minor / Honor (M/H#2)	AI3CC	3-X-X	4	70/85
	Sixth Semester (3rd year of UG)				
1	Deep Learning	AI302	3-0-2	4	85
2	Cloud Computing	AI304	3-0-2	4	85
3	Reinforcement Learning	AI332	3-0-2	4	85
4	Elective	AI3DD	3-X-X	3/4	55/70/85
5	Elective (Specialization#2)	AI3EE	3-X-X	3/4	55/70/85
			Total	**18-20**	**365-425**
6	Minor / Honor (M/H#3)	AI3FF	3-X-X	4	70/85
7	Vocational Training / Professional Experience (Optional) (Mandatory for Exit)	AIV06 / AIP06	0-0-10	5	200 (20 x 10)
	Seventh Semester (4th year of UG)				
1	Intelligent Multiagent and Expert Systems	AI401	3-0-2	4	85
2	Elective	AI4AA	3-X-X	3/4	55/70/85
3	Elective	AI4BB	3-X-X	3/4	55/70/85
4	Elective (Specialization#3)	AI4CC	3-X-X	3/4	55/70/85
5	Elective (Specialization#4)	AI4DD	3-X-X	3/4	55/70/85
			Total	**16-20**	**305-425**
6	Minor / Honor (M/H#4)	AI4EE	3-X-X	4	70/85
	Eighth Semester (4th year of UG)				
1	Industrial Internship / Professional Experience (Mandatory)	AIP08	0-0-40	20	800 (20 x 40)
			Total	**20**	**800**

Sr. No.	**Optional Core**	**Code**	**Scheme L-T-P**
1	Object Oriented Programming	AI231	3-0-2
2	Microprocessor and Interfacing Techniques	AI232	3-0-2
3	Information Security and Cryptography	AI331	3-0-2
4	Reinforcement Learning	AI332	3-0-2

Sr. No.	**Elective**	**Code**	**Scheme L-T-P**
1	Probabilistic Graphical Model	AI351	3-1-0
2	IoT and Edge Computing	AI352	3-0-2
3	Computer Graphics	AI353	3-0-2
4	System Software	AI354	3-0-2
5	Information Retrieval	AI355	3-0-2
6	Cyber Physical Systems	AI356	3-0-2
7	Data Structure and Algo	AI357	3-0-2

Subject Code: ##nXX; ##: Department Identity, n: Year, XX: Subject Sequence number XX: last digit 0 (subject offered in both ODD and EVEN semesters, XX: 01 to 30 – last digit ODD and EVEN for ODD and EVEN semesters (Mandatory Core), XX: 31 to 50 (Optional Core), XX: 51 to 99 (Elective), Subjects list for Minor and Honor (M/H#1-4), Subjects list for Specialization track (#1-4) EG: Engineering Subject, SC: Science Subject (offered combinedly by departments) (SVNIT Surat)

Sardar Vallabhbhai National Institute of Technology (SVNIT) Surat
Department of Artificial Intelligence
B.Tech. Artificial Intelligence

8	Optimization Techniques	AI358	3-1-0
9	Big data analytics and Large-Scale Computing	AI359	3-0-2
10	Computational Intelligence	AI360	3-0-2
11	Human Computer Interaction	AI361	3-0-2
12	Multimedia System & Applications	AI362	3-0-2
13	Unmanned Aerial Vehicles Information System	AI363	3-0-2
14	Introduction to Data Science	AI364	3-1-0
15	Natural Language Processing	AI365	3-0-2
16	Computer Vision and Image Processing	AI366	3-0-2
17	High Performance Computing	AI367	3-0-2
18	Social Network Analysis	AI368	3-0-2
19	Digital Forensics	AI369	3-0-2
20	Unmanned Aerial Vehicles Forensics	AI370	3-0-2
21	Speech and Audio Processing	AI371	3-0-2
22	Data Visualization	AI372	3-0-2
23	Machine Learning for Security	AI373	3-0-2
24	Service Oriented Architectures	AI374	3-0-2
25	Introduction to AI	AI375	3-0-2
26	Game Theory with AI and ML	AI451	3-0-2
27	AI for Bio-Medical Image Processing	AI452	3-0-2
28	Cloud Computing for AI and ML	AI453	3-0-2
29	Surveillance Video Analysis	AI454	3-0-2
30	Adversarial Machine Learning	AI455	3-0-2
31	Secure Cloud Computing	AI456	3-0-2
32	IoT & Sensor Data Analytics	AI457	3-0-2
33	Robotics Process Automation	AI458	3-0-2
34	Advanced Database Management System	AI459	3-0-2
35	Innovation, Incubation and Entrepreneurship	AI460	3-0-2
36	Research Methodology	AI461	3-1-0
37	Bioinformatics	AI462	3-0-2
38	Data Mining	AI463	3-0-2
39	Drone and Automation Systems	AI464	3-0-2
40	Animation and Rendering	AI465	3-0-2
41	System Analysis and Simulation	AI466	3-0-2
42	Introduction to ML	AI467	3-0-2
43	Applied Machine Learning	AI468	3-0-2

Subject Code: ##nXX; ##: Department Identity, n: Year, XX: Subject Sequence number XX: last digit 0 (subject offered in both ODD and EVEN semesters, XX: 01 to 30 – last digit ODD and EVEN for ODD and EVEN semesters (Mandatory Core), XX: 31 to 50 (Optional Core), XX: 51 to 99 (Elective), Subjects list for Minor and Honor (M/H#1-4), Subjects list for Specialization track (#1-4) EG: Engineering Subject, SC: Science Subject (offered combinedly by departments) (SVNIT Surat)

Sardar Vallabhbhai National Institute of Technology (SVNIT) Surat
Department of Electrical Engineering
B.Tech. Electrical Engineering

Sr. No.	Subject	Code	Scheme L-T-P	Credits (Min.)	Notional hours of Learning (Approx.)
	First Semester (1st year of UG)				
1	Basic Electrical Engineering	EE101	3-1-2	5	100
2	Engineering Drawing	ME110	2-0-4	4	100
3	Fundamentals of Physics	PH109	3-0-2	4	85
4	Mathematics-I	MA113	3-1-0	4	70
5	English and Professional Communication	HS110	3-1-0	4	70
			Total	**21**	**410**
6	Vocational Training / Professional Experience (Optional) (Mandatory for Exit)	EEV01 / EEP01	0-0-10	5	200 (20 x 10)
	Second Semester (1st year of UG)				
1	Electrical Circuits	EE102	3-1-0	4	70
2	Electronics Devices and Circuits	EC108	3-0-2	4	85
3	Fundamentals of Computers and Programing	CS110	3-0-2	4	85
4	Applied Thermal Engineering	ME108	3-0-2	4	70
5	Mathematics-II	MA114	3-1-0	4	70
6	Indian Value System and Social Consciousness	HS120	2-0-0	2	35
			Total	**22**	**430**
7	Electrical Workshop Vocational Training / Professional Experience (Optional) (Mandatory for Exit)	EEV02 / EEP02	0-0-10	5	200 (20 x 10)
	Third Semester (2nd year of UG)				
1	Electrical Machines I	EE201	3-1-2	5	100
2	Signals & Systems	EE203	3-1-0	4	70
3	Electromagnetic theory	EE231	3-1-0	4	70
4	Digital Circuits	EC209	3-0-2	4	85
5	Elective	EE2AA	3-X-X	3/4	55/70/85
			Total	**20-21**	**380-410**
	Fourth Semester (2nd year of UG)				
1	Electrical Machines – II	EE202	3-1-2	5	100
2	Elements of Power Systems	EE204	3-1-2	5	100
3	Numerical Methods and Applications to Electrical Engineering	EE232	3-1-2	5	100
4	Professional Ethics, Economics and Business Management	MG210	3-1-0	4	70
5	Elective	EE2BB	3-X-X	3/4	55/70/85
			Total	**22-23**	**425-455**
6	Minor / Honor (M/H#1)	EE2CC	3-X-X	4	70/85
7	Vocational Training / Professional Experience (Optional) (Mandatory for Exit)	EEV04 / EEP04	0-0-10	5	200 (20 x 10)
	Fifth Semester (3rd year of UG)				

Subject Code: ##nXX; ##: Department Identity, n: Year, XX: Subject Sequence number XX: last digit 0 (subject offered in both ODD and EVEN semesters, XX: 01 to 30 – last digit ODD and EVEN for ODD and EVEN semesters (Mandatory Core), XX: 31 to 50 (Optional Core), XX: 51 to 99 (Elective), Subjects list for Minor and Honor (M/H#1-4), Subjects list for Specialization track (#1-4) EG: Engineering Subject, SC: Science Subject (offered combinedly by departments) (SVNIT Surat)

Sardar Vallabhbhai National Institute of Technology (SVNIT) Surat
Department of Electrical Engineering
B.Tech. Electrical Engineering

1	Control Systems	EE301	3-1-2	5	100
2	Power Electronic Converters	EE303	3-1-2	5	100
3	Power System Analysis	EE331	3-1-2	5	100
4	Elective	EE3AA	3-X-X	3/4	55/70/85
5	Elective (Specialization#1)	EE3BB	3-X-X	3/4	55/70/85
			Total	**21-23**	**410-470**
6	Minor / Honor (M/H#2)	EE3CC	3-X-X	4	70/85
	Sixth Semester (3rd year of UG)				
1	Electrical and Electronic Measurements	EE302	3-1-2	5	100
2	Micro-processors & Micro-controllers	EE304	3-1-2	5	100
3	Electrical Machine Design	EE332	3-0-2	4	85
4	Elective	EE3DD	3-X-X	3/4	55/70/85
5	Elective (Specialization#2)	EE3EE	3-X-X	3/4	55/70/85
			Total	**20-22**	**395-455**
6	Minor / Honor (M/H#3)	EE3FF	3-X-X	4	70/85
7	Vocational Training / Professional Experience (Optional) (Mandatory for Exit)	EEV06 / EEP06	0-0-10	5	200 (20 x 10)
	Seventh Semester (4th year of UG)				
1	Innovation, Incubation and Entrepreneurship	MG110	3-1-0	4	70
2	Elective	EE4AA	3-X-X	3/4	55/70/85
3	Elective	EE4BB	3-X-X	3/4	55/70/85
4	Elective (Specialization#3)	EE4CC	3-X-X	3/4	55/70/85
5	Elective (Specialization#4)	EE4DD	3-X-X	3/4	55/70/85
			Total	**16-20**	**290-410**
6	Minor / Honor (M/H#4)	EE4EE	3-X-X	4	70/85
	Eighth Semester (4th year of UG)				
1	Industrial Internship / Professional Experience (Mandatory)	EEP08	0-0-40	20	800 (20 x 40)
			Total	**20**	**800**

Sr. No.	**Optional Core**	**Code**	**Scheme L-T-P**
1.	Electromagnetic Theory	EE231	3-1-0
2.	Numerical Methods and Applications to Electrical Engineering	EE232	3-1-2
3.	Power System Analysis	EE331	3-1-2
4.	Electrical Machine Design	EE332	3-0-2

Sr. No.	**Elective**	**Code**	**Scheme L-T-P**
1.	Forecasting and Planning Methods	EE251	3-0-0
2.	Renewable Energy Sources	EE252	3-0-0
3.	Modern Material for Electrical Engineering	EE253	3-0-0
4.	Optimization Methods	EE254	3-0-0
5.	Data structures	EE255	3-0-2

Subject Code: ##nXX; ##: Department Identity, n: Year, XX: Subject Sequence number XX: last digit 0 (subject offered in both ODD and EVEN semesters, XX: 01 to 30 – last digit ODD and EVEN for ODD and EVEN semesters (Mandatory Core), XX: 31 to 50 (Optional Core), XX: 51 to 99 (Elective), Subjects list for Minor and Honor (M/H#1-4), Subjects list for Specialization track (#1-4) EG: Engineering Subject, SC: Science Subject (offered combinedly by departments) (SVNIT Surat)

Sardar Vallabhbhai National Institute of Technology (SVNIT) Surat
Department of Electrical Engineering
B.Tech. Electrical Engineering

6.	Principles and Applications of Electrochemistry	CY211	3-0-0
7.	Special Machines	EE256	3-0-0
8.	Power Plant Engineering	EE257	3-0-0
9.	Energy Audit and Management	EE259	3-0-0
10.	Reliability Evaluation of Electrical Systems	EE260	3-0-0
11.	Modeling of Electrical Machines (PEED)	EE281	3-1-0
12.	Computer Methods for Power Systems (PS)	EE282	3-1-0
13.	State Variable Analysis (IC)	EE283	3-1-0
14.	Electrical Traction and Linear Machines	EE351	3-0-0
15.	Utilization of Electrical Energy	EE352	3-0-0
16.	Power System Operation and Control	EE354	3-0-0
17.	Random Processes	EE355	3-0-0
18.	Power Electronic Systems and Electrical Drives (PEED)	EE381	3-1-0
19.	Switch Gear and Protection (PS)	EE382	3-1-0
20.	Discrete-time Control Systems (IC)	EE383	3-1-0
21.	Robotics	EE356	3-0-0
22.	Advanced Industrial Automation	EE357	3-0-0
23.	Instrumentation	EE358	3-0-0
24.	Cryptography and Cyber Security for Smart Grid	EE359	3-0-0
25.	Restructuring and Deregulation of Power Systems	EE360	3-0-0
26.	Wind and Solar Energy Conversion	EE361	3-0-0
27.	Power Quality Disturbances and Mitigation	EE451	3-0-0
28.	Advanced Electrical Drives	EE452	3-0-0
29.	Power System Transients	EE453	3-0-0
30.	HVDC Transmission	EE454	3-0-0
31.	Nonlinear Control	EE455	3-0-0
32.	Advanced Optimization Methods	EE456	3-0-0
33.	Electric Vehicles	EE457	3-0-0
34.	Switched Mode Power Supply	EE458	3-0-0
35.	Power Filter Technology	EE459	3-0-0
36.	EHV AC Transmission	EE460	3-0-0
37.	Distributed Power Generation and Micro-grid	EE461	3-0-0
38.	Smart Grid Technologies	EE462	3-0-0
39.	Advanced Power Electronics (PEED)	EE481	3-1-0
40.	Flexible AC Transmission (Common to PEED and PS)	EE482	3-1-0
41.	High Voltage Engineering (PS)	EE483	3-1-0
42.	Optimal Control (IC)	EE484	3-1-0
43.	Advanced Industrial Instrumentation (IC)	EE485	3-1-0

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Sardar Vallabhbhai National Institute of Technology (SVNIT) Surat
Department of Electrical Engineering
B.Tech. Electrical Engineering

Sr. No.	B.Tech (Civil, Mech, ChE) (Minor in Electrical Engineering)	Code	Scheme L-T-P
1.	Electrical Circuits	EE282	3-1-0
2.	Electrical Machines	EE381	3-0-2
3.	Power Systems	EE382	3-0-2
4.	Electrical and Electronic Measurements	EE481	3-0-2

Sr. No.	B.Tech (CSE, ECE) (Minor in Electrical Engineering)	Code	Scheme L-T-P
1.	Electrical Machines	EE284	3-0-2
2.	Power Systems	EE384	3-0-2
3.	Power electronics	EE386	3-0-2
4.	Electrical and Electronic Measurements	EE483	3-0-2

Sr. No.	B.Tech (EE) (Honor in Electrical Engineering)	Code	Scheme L-T-P
1.	Introduction To Object Oriented Programming	EE291	3-0-2
2.	Artificial Intelligence Techniques	EE391	3-0-2
3.	Digital Signal Processing	EE392	3-0-2
4.	Advanced Micro controller	EE491	3-0-2

Subject Code: ##nXX; ##: Department Identity, n: Year, XX: Subject Sequence number XX: last digit 0 (subject offered in both ODD and EVEN semesters, XX: 01 to 30 – last digit ODD and EVEN for ODD and EVEN semesters (Mandatory Core), XX: 31 to 50 (Optional Core), XX: 51 to 99 (Elective), Subjects list for Minor and Honor (M/H#1-4), Subjects list for Specialization track (#1-4) EG: Engineering Subject, SC: Science Subject (offered combinedly by departments) (SVNIT Surat)

Sardar Vallabhbhai National Institute of Technology (SVNIT) Surat
Department of Electronics Engineering
B.Tech. Electronics and Communication Engineering

Sr. No.	Subject	Code	Scheme L-T-P	Credits (Min.)	Notional hours of Learning (Approx.)
	First Semester (1st year of UG)				
1	Semiconductor Physics and Devices	EC101	3-1-0	4	70
2	Mathematics-I	MA117	3-1-0	4	70
3	Fundamentals of Computer and Programming	CS110	3-0-2	4	85
4	Fundamentals of Electrical Engineering	EE110	3-0-2	4	85
5	English and Professional Communication	HS110	3-1-0	4	70
			Total	**20**	**380**
6	Vocational Training / Professional Experience (Optional) (Mandatory for Exit)	ECV01 / ECP01	0-0-10	5	200 (20 x 10)
	Second Semester (1st year of UG)				
1	Mathematics-II	MA116	3-1-0	4	70
2	Electronic Circuits	EC102	3-0-2	4	85
3	Digital Logic Design	EC104	3-0-2	4	85
4	Network Analysis and Synthesis	EE104	3-1-0	4	70
5	Energy and Environmental Engineering	EG110	3-0-2	4	85
6	Indian Value System and Social Consciousness	HS120	2-0-0	2	35
			Total	**22**	**430**
7	Vocational Training / Professional Experience (Optional) (Mandatory for Exit)	ECV02 / ECP02	0-0-10	5	200 (20 x 10)
	Third Semester (2nd year of UG)				
1	Analog Circuits	EC201	3-0-2	4	85
2	Signals and Systems	EC203	3-1-0	4	70
3	Microprocessors and Microcontrollers	EC205	3-0-2	4	85
4	Principles of Communication Systems	EC207	3-0-2	4	85
5	Control Systems	EE205	3-0-2	4	85
			Total	**20**	**395**
6	Vocational Training / Professional Experience (Optional) (Mandatory for Exit)	ECV03 / ECP03	0-0-10	5	200 (20 x 10)
	Fourth Semester (2nd year of UG)				
1	Statistical Signal Analysis	EC202	3-1-0	4	70
2	Linear IC Applications	EC204	3-0-2	4	85
3	Electromagnetic Waves	EC206	3-0-2	4	85
4	Digital Integrated Circuits	EC208	3-0-2	4	85
5	Digital Communication	EC212	3-0-2	4	85
			Total	**20**	**410**
6	Minor / Honor (M/H#1)	EC2AA	3-X-X	4	70/85
7	Vocational Training / Professional Experience (Optional) (Mandatory for Exit)	ECV04 / ECP04	0-0-10	5	200 (20 x 10)
	Fifth Semester (3rd year of UG)				
1	Digital Signal Processing	EC301	3-0-2	4	85

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Sardar Vallabhbhai National Institute of Technology (SVNIT) Surat
Department of Electronics Engineering
B.Tech. Electronics and Communication Engineering

2	Optional Core	EC3AA	3-X-X	3/4	55/70/85
3	Professional Ethics, Economics, and Business Management	MG210	3-1-0	4	70
4	Elective	EC3BB	3-X-X	3/4	55/70/85
5	Elective (Specialization#1)	EC3CC	3-X-X	3/4	55/70/85
			Total	**17-20**	**320-410**
6	Minor / Honor (M/H#2)	EC3DD	3-X-X	4	70/85
7	Vocational Training / Professional Experience (Optional) (Mandatory for Exit)	ECV05 / ECP05	0-0-10	5	200 (20 x 10)
	Sixth Semester (3rd year of UG)				
1	Optional Core	EC3EE	3-X-X	3/4	55/70/85
2	Optional Core	EC3FF	3-X-X	3/4	55/70/85
3	Elective	EC3GG	3-X-X	3/4	55/70/85
4	Elective	EC3HH	3-X-X	3/4	55/70/85
5	Elective (Specialization#2)	EC3II	3-X-X	3/4	55/70/85
			Total	**15-20**	**275-425**
6	Minor / Honor (M/H#3)	EC3JJ	3-X-X	4	70/85
7	Vocational Training / Professional Experience (Optional) (Mandatory for Exit)	ECV06 / ECP06	0-0-10	5	200 (20 x 10)
	Seventh Semester (4th year of UG)				
1	UG Project	EC401	0-0-10	4	130
2	Optional Core	EC4AA	3-X-X	3/4	55/70/85
3	Elective	EC4BB	3-X-X	3/4	55/70/85
4	Elective (Specialization#3)	EC4CC	3-X-X	3/4	55/70/85
5	Elective (Specialization#4)	EC4DD	3-X-X	3/4	55/70/85
			Total	**16-20**	**350-470**
6	Minor / Honor (M/H#4)	EC4EE	3-X-X	4	70/85
	Eighth Semester (4th year of UG)				
1	Industrial Internship / Professional Experience (Mandatory)	ECP08	0-0-40	20	800 (20 x 40)
			Total	**20**	**800**

Sr. No.	**Optional Core**	**Code**	**Scheme L-T-P**
1	Data Communication Networks	EC331	3-0-2
2	Fundamentals of Nanoelectronics	EC332	3-0-2
3	Electronic Instrumentation	EC333	3-0-2
4	Data Structures and Algorithms	EC334	3-0-2
5	CMOS Analog VLSI Design	EC335	3-0-2
6	Antenna Theory	EC336	3-0-2
7	Computer Architecture and Organization	EC337	3-0-2
8	Optical Fiber Communication	EC338	3-0-2
9	Adaptive Signal Processing	EC339	3-0-2
10	Optical Wireless Communication	EC431	3-0-2
11	Information Theory and Coding	EC432	3-0-2

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12	Testing and Verification of VLSI Circuits	EC433	3-0-2

Sr. No.	Elective	Code	Scheme L-T-P
1	Sensors and Transducers	EC351	3-0-2
2	Neural Networks	EC352	3-0-2
3	Multimedia Communication	EC353	3-0-2
4	Solar Photovoltaic Technology	EC354	3-0-2
5	High-Performance Computing	EC355	3-0-2
6	Computer Vision	EC356	3-0-2
7	MEMS	EC357	3-0-2
8	Spectrum Engineering	EC358	3-0-2
9	VLSI Design	EC359	3-0-2
10	Digital Image Processing	EC360	3-0-2
11	5G Wireless & Mobile Communication	EC361	3-0-2
12	Embedded Systems	EC362	3-0-2
13	Speech Processing and Human-Machine Communication	EC363	3-0-2
14	MIMO Communication systems	EC364	3-0-2
15	VLSI Technology	EC365	3-0-2
16	Machine Learning	EC366	3-0-2
17	Microwave Engineering	EC451	3-0-2
18	Processor Architecture	EC452	3-0-2
19	Quantum Computing	EC453	3-0-2
20	Advanced Electronic Circuits	EC454	3-0-2
21	Global Navigation Satellite System	EC455	3-0-2
22	Biomedical Instrumentation	EC456	3-0-2
23	Real-Time Systems	EC457	3-0-2
24	Cognitive Radio	EC458	3-0-2
25	Intelligent Systems and Robotics	EC459	3-0-2
26	EM Interference and Compatibility	EC460	3-0-2
27	Estimation and Detection Theory	EC461	3-0-2
28	Ad-Hoc Networks	EC462	3-0-2
29	Drone Systems	EC463	3-0-2
30	VLSI Systems	EC464	3-0-2
31	Deep Learning	EC465	3-0-2
32	IoT and Applications	EC466	3-0-2

Subject Code: ##nXX; ##: Department Identity, n: Year, XX: Subject Sequence number XX: last digit 0 (subject offered in both ODD and EVEN semesters, XX: 01 to 30 – last digit ODD and EVEN for ODD and EVEN semesters (Mandatory Core), XX: 31 to 50 (Optional Core), XX: 51 to 99 (Elective), Subjects list for Minor and Honor (M/H#1-4), Subjects list for Specialization track (#1-4) EG: Engineering Subject, SC: Science Subject (offered combinedly by departments) (SVNIT Surat)

Sardar Vallabhbhai National Institute of Technology (SVNIT) Surat
Department of Mechanical Engineering
B.Tech. Mechanical Engineering

Sr. No.	Subject	Code	Scheme L-T-P	Credits (Min.)	Notional hours of Learning (Approx.)
	First Semester (1st year of UG)				
1	Elements of Thermal and Fluid Systems	ME101	3-0-2	4	85
2	Engineering Mechanics	ME103	3-1-0	4	70
3	Energy and Environmental Engineering	EG110	3-0-2	4	85
4	Fundamentals of Computer and Programming	CS110	3-0-2	4	85
5	Engineering Mathematics	MA117	3-1-0	4	70
6	Workshop Practice	ME105	0-0-4	2	70
7	Indian Value System and Social Consciousness	HS120	2-0-0	2	35
			Total	**24**	**500**
8	Vocational Training / Professional Experience (Optional) (Mandatory for Exit)	MEV01 / MEP01	0-0-10	5	200 (20 x 10)
	Second Semester (1st year of UG)				
1	Engineering Thermodynamics	ME102	3-1-0	4	70
2	Engineering Drawing	ME110	2-0-4	4	100
3	Elements of Materials and Manufacturing	ME106	3-0-2	4	85
4	Applied Electrical and Electronics Engineering	EE106	3-0-2	4	85
5	English and Professional Communication	HS110	3-1-0	4	77
			Total	**20**	**417**
6	Vocational Training / Professional Experience (Optional) (Mandatory for Exit)	MEV02 / MEP02	0-0-10	5	200 (20 x 10)
	Third Semester (2nd year of UG)				
1	Measurement and Instrumentation	ME201	3-1-0	4	85
2	Theory of Machines	ME203	3-1-2	5	100
3	Metallurgy	ME205	3-1-0	4	85
4	Fluid Mechanics	ME207	3-1-2	5	100
5	Elective	ME2AA	3-X-X	3/4	55/70/85
			Total	**21-22**	**425-455**
6	Vocational Training / Professional Experience (Optional) (Mandatory for Exit)	MEV03 / MEP03	0-0-10	**5**	200 (20 x 10)
	Fourth Semester (2nd year of UG)				
1	Fluid Machines	ME202	3-0-2	4	85
2	Heat Transfer	ME204	3-0-2	4	85
3	Industrial Engineering	ME206	3-1-0	4	70
4	Dynamics of Machines	ME208	3-1-2	5	100
5	Elective	ME2BB	3-X-X	3/4	55/70/85
			Total	**20-21**	**395-425**
6	Minor / Honor (M/H#1)	ME2CC	3-X-X	4	70/85
7	Vocational Training / Professional Experience (Optional) (Mandatory for Exit)	MEV04 / MEP04	0-0-10	5	200 (20 x 10)
	Fifth Semester (3rd year of UG)				

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Sardar Vallabhbhai National Institute of Technology (SVNIT) Surat
Department of Mechanical Engineering
B.Tech. Mechanical Engineering

1	Thermal Power Plant	ME301	3-1-0	4	70
2	Tribology and Mechanical Vibration	ME303	3-0-2	4	85
3	Machining Processes	ME305	3-0-2	4	85
4	Fundamentals of Machine Design	ME307	3-1-2	5	100
5	Elective	ME3AA	3-X-X	3/4	55/70/85
			Total	**20-21**	**395-425**
6	Minor / Honor (M/H#2)	ME3BB	3-X-X	4	70/85
7	Vocational Training / Professional Experience (Optional) (Mandatory for Exit)	MEV05 / MEP05	0-0-10	5	200 (20 x 10)
	Sixth Semester (3rd year of UG)				
1	Production Technology	ME302	3-0-2	4	85
2	Design of Machine Components	ME304	3-1-2	5	100
3	Applied Thermal engineering	ME306	3-1-2	5	100
4	Elective	ME3AA	3-X-X	3/4	55/70/85
5	Elective	ME3BB	3-X-X	3/4	55/70/85
			Total	**20-22**	**395-455**
6	Minor / Honor (M/H#3)	ME3CC	3-X-X	4	70/85
7	Vocational Training / Professional Experience (Optional) (Mandatory for Exit)	MEV06 / MEP06	0-0-10	5	200 (20 x 10)
	Seventh Semester (4th year of UG)				
1	CAD-CAM	ME401	3-1-2	5	100
2	Industrial Management Techniques	ME403	3-1-0	4	70
3	Elective	ME4AA	3-X-X	3/4	55/70/85
4	Elective	ME4BB	3-X-X	3/4	55/70/85
5	Elective	ME4CC	3-X-X	3/4	55/70/85
6	Project	ME405	0-0-4	2	70
			Total	**20-22**	**405-495**
7	Minor / Honor (M/H#4)	ME4DD	3-X-X	4	70/85
	Eighth Semester (4th year of UG)				
1	Industrial Internship / Professional Experience (Mandatory)	MEP05	0-0-40	20	800 (20 x 40)
			Total	**20**	**800**

Sr. No.	**Elective**	**Code**	**Scheme L-T-P**
1	Numerical Methods for Mechanical Engineers	ME251	3-0-0
2	Energy and Exergy Analysis of Thermal system	ME252	3-0-0
3	Maintenance and Safety Engineering	ME253	3-0-0
4	Theory of Elasticity and Plasticity	ME254	3-0-0
5	Engineering Estimating & Costing	ME255	3-0-0
6	Plastics & Ceramics	ME256	3-0-0
7	Advance Engineering Materials	ME257	3-0-0
8	Experimental Fluid Mechanics	ME358	3-0-0
9	Numerical Methods for Engineers	ME359	3-0-0
10	Experimental Stress analysis	ME360	3-0-0

Subject Code: ##nXX; ##: Department Identity, n: Year, XX: Subject Sequence number XX: last digit 0 (subject offered in both ODD and EVEN semesters, XX: 01 to 30 – last digit ODD and EVEN for ODD and EVEN semesters (Mandatory Core), XX: 31 to 50 (Optional Core), XX: 51 to 99 (Elective), Subjects list for Minor and Honor (M/H#1-4), Subjects list for Specialization track (#1-4) EG: Engineering Subject, SC: Science Subject (offered combinedly by departments) (SVNIT Surat)

Sardar Vallabhbhai National Institute of Technology (SVNIT) Surat
Department of Mechanical Engineering
B.Tech. Mechanical Engineering

11	Condition Monitoring	ME361	3-0-0
12	Additive Manufacturing	ME362	3-0-0
13	Corrosion Engineering	ME363	3-0-0
14	Risk, Reliability & Life Testing	ME364	3-0-0
15	Computational Fluid Dynamics	ME351	3-0-0
16	Elements of Micro hydro plant and Pumping Systems	ME352	3-0-0
17	Renewable Energy	ME353	3-0-0
18	Gas Dynamics	ME354	3-0-0
19	Smart Materials and Structures	ME355	3-0-0
20	Control Engineering	ME356	3-0-0
21	Total Quality Management	ME357	3-0-0
22	Design for Additive Manufacturing	ME358	3-0-0
23	Powder Processing Techniques	ME359	3-0-0
24	Electric Vehicles	ME360	3-0-0
25	Fundamentals of Combustion	ME361	3-0-0
26	Elements of Gas turbine	ME362	3-0-0
27	Finite Element Method	ME363	3-0-0
28	Product Design and Development	ME364	3-0-0
29	Unconventional Machining Processes	ME365	3-0-0
30	Logistics & Supply Chain	ME366	3-0-0
31	Tooling for Manufacturing	ME367	3-0-0
32	Automobile Engineering	ME368	3-0-0
33	Energy and Buildings	ME369	3-0-0
34	Jet Propulsion	ME370	3-0-0
35	Robotics	ME371	3-0-0
36	Mechanics of Composite Materials	ME372	3-0-0
37	Welding Technology	ME373	3-0-0
38	Production Planning & Control	ME374	3-0-0
39	Plant Layout & Material Handling	ME375	3-0-0
40	Design of Heat Exchanger	ME451	3-0-0
41	Energy Efficiency in Industrial Utilities	ME452	3-0-0
42	Rocket Propulsion	ME453	3-0-0
43	Fatigue, Fracture and Failure analysis	ME454	3-0-0
44	Computer Aided Machine Design	ME455	3-0-0
45	Metal Forming Technology	ME456	3-0-0
46	Production and Operations Management	ME457	3-0-0
47	Mechatronics & Industrial Automation	ME458	3-0-0
48	Radiative Heat Transfer	ME459	3-0-0
49	Advanced Refrigeration and Air Conditioning Systems	ME460	3-0-0
50	Design of Material Handling Equipment	ME461	3-0-0
51	Lubrication Engineering	ME462	3-0-0
52	Foundry Technology	ME463	3-0-0
53	Processing of Composites	ME464	3-0-0
54	Computer Integrated Manufacturing	ME465	3-0-0
55	Two Phase Flow	ME466	3-0-0

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56	Theory and Analysis of Cryogenics System	ME467	3-0-0
57	Design of Pressure Vessels	ME468	3-0-0
58	Rotodynamics	ME469	3-0-0
59	Industry 5.0	ME470	3-0-0
60	Micro & Nano Manufacturing	ME471	3-0-0
61	Surface Engineering & Heat Treatment	ME472	3-0-0

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Sardar Vallabhbhai National Institute of Technology (SVNIT) Surat
Department of Mathematics
Five Years Integrated M.Sc. Mathematics

Sr. No.	Subject	Code	Scheme L-T-P	Credits (Min.)	Notional hours of Learning (Approx.)
	First Semester (1st year of MSc)				
1	Foundation Course in Mathematics-I	MA101	3-1-0	4	70
2	Calculus-I	MA103	3-1-0	4	70
3	Computer Programming using C/C++	MA131	3-0-2	4	85
4	English and Professional Communication	HS110	3-1-0	4	70
5	Fundamentals of Physics	PH113	3-0-2	4	85
			Total	**20**	**380**
6	Vocational Training / Professional Experience (Optional) (mandatory for exit)	MAV01 / MAP01	0-0-10	5	200 (20 x 10)
	Second Semester (1st year of MSc)				
1	Foundation Course in Mathematics-II	MA102	3-1-0	4	70
2	Calculus-II	MA104	3-1-0	4	70
3	Python Programming	MA132	3-0-2	4	85
4	Fundamentals of Physics-II	PH106	3-0-2	4	85
5	Chemistry	CY112	3-0-2	4	85
6	Indian Value System and Social Consciousness	HS120	2-0-0	2	35
			Total	**22**	**430**
7	Vocational Training / Professional Experience (Optional) (mandatory for exit)	MAV02 / MAP02	0-0-10	5	200 (20 x 10)
	Third Semester (2nd year of MSc)				
1	Element of Analysis	MA201	3-1-0	4	70
2	Analytical Geometry	MA203	3-1-0	4	70
3	Discrete Mathematical Structure	MA205	3-1-0	4	70
4	Data Structure	MA231	3-0-2	4	85
5	English and Professional Communication - II	HS201	3-1-0	4	70
			Total	**20**	**365**
6	Mathematical Software-I Vocational Training / Professional Experience (Optional) (mandatory for exit)	MAV03 / MAP03	0-0-10	5	200 (20 x 10)
	Fourth Semester (2nd year of MSc)				
1	Numerical Analysis	MA202	3-1-0	4	70
2	Linear Algebra	MA204	3-1-0	4	70
3	Elementary Number theory	MA232	3-1-0	4	70
4	Computational Life Science	MA233	3-1-0	4	70
5	Computer Networks	CS208	3-0-2	4	85
			Total	**20**	**365**
6	Mathematical Software-II Vocational Training / Professional Experience (Optional) (mandatory for exit)	MAV04 / MAP04	0-0-10	5	200 (20 x 10)
	Fifth Semester (3rd year of MSc)				

Subject Code: ##nXX; ##: Department Identity, n: Year, XX: Subject Sequence number XX: last digit 0 (subject offered in both ODD and EVEN semesters, XX: 01 to 30 – last digit ODD and EVEN for ODD and EVEN semesters (Mandatory Core), XX: 31 to 50 (Optional Core), XX: 51 to 99 (Elective), Subjects list for Minor and Honor (M/H#1-4), Subjects list for Specialization track (#1-4) EG: Engineering Subject, SC: Science Subject (offered combinedly by departments) (SVNIT Surat)

Sardar Vallabhbhai National Institute of Technology (SVNIT) Surat
Department of Mathematics
Five Years Integrated M.Sc. Mathematics

1	Ordinary Differential Equations	MA301	3-1-0	4	70
2	Mechanics	MA303	3-1-0	4	70
3	Probability and Statistics-I	MA331	3-1-0	4	70
4	Analysis of Algorithms	MA332	3-1-0	4	70
5	Elective	MA3AA	3-X-X	3/4	55/70/85
			Total	**19-20**	**335-365**
6	Mini Project-I Preliminary Part-I Vocational Training / Professional Experience (Optional) (mandatory for exit)	MAV05 / MAP05	0-0-10	5	200 (20 x 10)
	Sixth Semester (3rd year of MSc)				
1	Complex Analysis	MA302	3-1-0	4	70
2	Continuum Mechanics	MA304	3-1-0	4	70
3	Metric Space	MA333	3-1-0	4	70
4	Fundamentals of Artificial Intelligence	CS300	3-0-2	4	85
5	Elective	MA3BB	3-X-X	3/4	55/70/85
			Total	**19-20**	**350-380**
6	Mini Project-I Preliminary Part-II Vocational Training / Professional Experience (Optional) (mandatory for exit)	MAV06 / MAP06	0-0-10	5	200 (20 x 10)
	Seventh Semester (4th year of MSc)				
1	Topology	MA401	3-1-0	4	70
2	Abstract Algebra	MA403	3-1-0	4	70
3	Fluid Dynamics	MA405	3-1-0	4	70
4	Optimization Techniques	MA431	3-1-0	4	70
5	Elective	MA4AA	3-X-X	3/4	55/70/85
			Total	**19-20**	**335-365**
6	Mini Project-II Preliminary Part-I Vocational Training / Professional Experience (Optional) (mandatory for exit)	MAV07 / MAP07	0-0-10	5	200 (20 X 10)
	Eighth Semester (4th year of MSc)				
1	Functional Analysis	MA402	3-1-0	4	70
2	Higher Transcendental Functions	MA404	3-1-0	4	70
3	Partial Differential Equations	MA406	3-1-0	4	70
4	Calculus of Variations & Integral Equations	MA432	3-1-0	4	70
5	Elective	MA4CC	3-X-X	3/4	55/70/85
			Total	**19-20**	**335-365**
6	Mini Project-II Preliminary Part-II Vocational Training / Professional Experience (Optional) (mandatory for exit)	MAV08 / MAP08	0-0-10	5	200 (20 X 10)
	Ninth Semester (5th year of MSc)				
1	Measure Theory and Integration	MA501	3-1-0	4	70
2	Advanced Mathematical Modelling and Simulation	MA503	3-0-2	4	85
3	Probability and Statistics-II	MA531	3-1-0	4	70
4	Communication and Technical Writing Skill	HS501	3-1-0	4	70

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Sardar Vallabhbhai National Institute of Technology (SVNIT) Surat
Department of Mathematics
Five Years Integrated M.Sc. Mathematics

5	Elective	MA5AA	3-X-X	3/4	55/70/85
			Total	**19-20**	**350-380**
	Tenth Semester (5th year of MSc)				
1	Dissertation	MAP10	0-0-40	20	800 (40 x 20)
			Total	**20**	**800**

Sr. No.	**Optional Core**	**Code**	**Scheme L-T-P**
1	Computer Programming using C/C++	MA131	3-0-2
2	Python Programming	MA132	3-0-2
3	Data Structure	MA231	3-0-2
4	Elementary Number theory	MA232	3-1-0
5	Computational Life Science	MA233	3-1-0
6	Probability and Statistics-I	MA331	3-1-0
7	Analysis of Algorithms	MA332	3-1-0
8	Metric Space	MA333	3-1-0
9	Optimization Techniques	MA431	3-1-0
10	Calculus of Variations & Integral Equations	MA432	3-1-0
11	Probability and Statistics-II	MA531	3-1-0

Sr. No.	**Elective**	**Code**	**Scheme L-T-P**
1	Advance Mathematical Methods-I	MA351	3-1-0
2	Stochastic Differential Equations	MA352	3-1-0
3	Mathematical Modelling	MA353	3-1-0
4	Integral and Wavelet Transform	MA354	3-1-0
5	Mathematical Finance	MA355	3-1-0
6	Fuzzy Set theory	MA356	3-1-0
7	Block Chain Technology	CS360	3-0-2
8	Sobolev Space	MA451	3-1-0
9	Advance Mathematical Methods-II	MA452	3-1-0
10	Natural Language Processing	CS461	3-0-2
11	Data Analytics	MA453	3-0-2
12	Multi Objective Optimization	MA454	3-1-0
13	Evolutionary Algorithms	MA455	3-1-0
14	Advance Operations Research	MA551	3-1-0
15	Fluid Dynamics in Porous Media	MA552	3-1-0
16	Advanced Numerical Analysis	MA553	3-1-0
17	Linear Operator and Approximation Theory	MA554	3-1-0

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Sardar Vallabhbhai National Institute of Technology (SVNIT) Surat
Department of Chemistry
Five Years Integrated M.Sc. Chemistry

Sr. No.	Subject	Code	Scheme L-T-P	Credits (Min.)	Notional hours of Learning (Approx.)
	First Semester (1st year of MSc)				
1	Stoichiometry, Solutions and Gases	CY101	3-1-2	5	100
2	Atomic Structure and Chemical Bonding	CY103	3-0-2	4	85
3	Qualitative and Quantitative Analysis	CY105	3-0-2	4	85
4	Mathematics for Chemistry	MA121	3-1-0	4	70
5	Physics of Materials and Nuclei	PH111	3-0-0	3	55
6	Indian Value System and Social Consciousness	HS120	2-0-0	2	35
			Total	**22**	**430**
7	Vocational Training / Professional Experience (Optional) (Mandatory for Exit)	CYV01 / CYP01	0-0-10	5	200 (20 x 10)
	Second Semester (1st year of MSc)				
1	Fundamentals of Organic Chemistry	CY102	3-1-2	5	100
2	Basic Industrial Chemistry	CY104	3-0-2	4	85
3	Chemistry of s- and p-block Elements	CY106	3-0-0	3	55
4	Fundamentals of Computer and Programming	CS110	3-0-2	4	85
5	English and Professional Communication	HS110	3-1-0	4	70
			Total	**20**	**395**
6	Vocational Training / Professional Experience (Optional) (Mandatory for Exit)	CYV02 / CYP02	0-0-10	5	200 (20 x 10)
	Third Semester (2nd year of MSc)				
1	Chemistry of d- and f-block Elements	CY201	3-1-2	5	100
2	Hetero Functional Groups and Heterocycles	CY203	3-0-2	4	85
3	State and Properties of Matter	CY205	3-0-2	4	85
4	Optics	PH205	3-0-2	4	85
5	Quality Control and Quality Assurance	CY207	3-0-0	3	55
			Total	**20**	**410**
6	Vocational Training / Professional Experience (Optional) (Mandatory for Exit)	CYV03 / CYP03	0-0-10	5	200 (20 x 10)
	Fourth Semester (2nd year of MSc)				
1	Coordination and Bioinorganic Chemistry	CY202	3-0-2	4	85
2	Organic Reaction Mechanism	CY204	3-1-2	5	100
3	Equilibrium and Changes	CY206	3-0-2	4	85
4	Dyes and Drugs	CY208	3-0-2	4	85
5	Biomolecules and Cell Biology	CY212	3-0-0	3	55
			Total	**20**	**410**
6	Laboratory Demonstration of Quality Control and Quality Assurance Practical Vocational Training / Professional Experience (Optional) (mandatory for exit)	CYV04 / CYP04	0-0-10	5	200 (20 x 10)
	Fifth Semester (3rd year of MSc)				

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Sardar Vallabhbhai National Institute of Technology (SVNIT) Surat
Department of Chemistry
Five Years Integrated M.Sc. Chemistry

1	Organometallic Chemistry	CY301	3-0-2	4	85
2	Pericyclic Reactions and Photochemistry	CY303	3-0-4	5	115
3	Analytical Chemistry	CY305	3-0-4	5	115
4	Physical Methods of Structure Determination	CY307	3-0-0	3	55
5	Unit Process in Chemical Industries	CY309	3-0-0	3	55
			Total	**20**	**425**
6	Purification of Liquids and Solids Vocational Training / Professional Experience (Optional) (mandatory for exit)	CYV05 / CYP05	0-0-10	5	200 (20 x 10)
	Sixth Semester (3rd year of MSc)				
1	Interpretative Molecular Spectroscopy	CY302	3-1-0	4	70
2	Molecules in Motion and Reaction Dynamics	CY304	3-1-2	5	100
3	Polymer Chemistry	CY306	3-0-4	5	115
4	Chemistry in Industries	CY308	3-0-0	3	55
5	Materials Chemistry	CY312	3-0-0	3	55
			Total	**20**	**395**
6	Vocational Training / Professional Experience (Optional) (mandatory for exit)	CYV06 / CYP06	0-0-10	5	200 (20 x 10)
	Seventh Semester (4th year of MSc)				
1	Reaction Mechanism in Coordination Chemistry	CY401	3-0-4	5	115
2	Synthetic Approaches in Organic Chemistry	CY403	3-0-4	5	115
3	Atomic Spectroscopy and Electron Microscopic Techniques	CY405	3-1-0	4	70
4	Computational Chemistry	CY407	3-0-4	5	115
5	Elective	CY4AA	3-X-X	3/4	55/70/85
			Total	**22-23**	**470-500**
6	Skill Development on Computational Tools Vocational Training / Professional Experience (Optional) (mandatory for exit)	CYV07 / CYP07	0-0-10	5	200 (20 x 10)
	Eighth Semester (4th year of MSc)				
1	Symmetry, Spectra and Magnetism	CY402	3-1-0	4	70
2	Chemistry of Natural Products	CY404	3-0-4	5	115
3	Physical Aspects of Molecular Spectroscopy	CY406	3-1-0	4	70
4	Purification and Separation Techniques	CY408	3-0-4	5	115
5	Elective	CY4BB	3-X-X	3/4	55/70/85
			Total	**21-22**	**425-455**
6	Skill Development on GMP and GLP Vocational Training / Professional Experience (Optional) (mandatory for exit)	CYV08 / CYP08	0-0-10	5	200 (20 x 10)
	Ninth Semester (5th year of MSc)				
1	Quantum Chemistry	CY501	3-0-0	3	55
2	Heterocycles and Organic Synthesis	CY503	3-0-0	3	55
3	Research Methodology in Chemistry	CY505	3-0-0	3	55
4	Elective	CY5AA	3-X-X	3/4	55/70/85

Subject Code: ##nXX; ##: Department Identity, n: Year, XX: Subject Sequence number XX: last digit 0 (subject offered in both ODD and EVEN semesters, XX: 01 to 30 – last digit ODD and EVEN for ODD and EVEN semesters (Mandatory Core), XX: 31 to 50 (Optional Core), XX: 51 to 99 (Elective), Subjects list for Minor and Honor (M/H#1-4), Subjects list for Specialization track (#1-4) EG: Engineering Subject, SC: Science Subject (offered combinedly by departments) (SVNIT Surat)

Sardar Vallabhbhai National Institute of Technology (SVNIT) Surat
Department of Chemistry
Five Years Integrated M.Sc. Chemistry

5	Elective	CY5BB	3-X-X	3/4	55/70/85
6	Research Training in Chemical Sciences	CYP09	0-0-10	5	200 (20 x 10)
			Total	**20-22**	**475-535**
	Tenth Semester (5th year of MSc)				
1	M.Sc. Dissertation Industrial Internship / Professional Experience (Mandatory)	CYP10	0-0-40	20	800 (40 X 20)
			Total	**20**	**800**

Sr. No.	**Elective**	**Code**	**Scheme L-T-P**
1	Surfactant Chemistry	CY451	3-0-0
2	Chemistry of Nanomaterials	CY452	3-0-0
3	Green Chemical Processing	CY453	3-0-0
4	C-H Functionalization	CY454	3-0-0
5	Catalysis	CY551	3-0-0
6	Medicinal Chemistry	CY552	3-0-0
7	Supramolecular Chemistry	CY553	3-0-0
8	Nuclear Chemistry	CY554	3-0-0

Subject Code: ##nXX; ##: Department Identity, n: Year, XX: Subject Sequence number XX: last digit 0 (subject offered in both ODD and EVEN semesters, XX: 01 to 30 – last digit ODD and EVEN for ODD and EVEN semesters (Mandatory Core), XX: 31 to 50 (Optional Core), XX: 51 to 99 (Elective), Subjects list for Minor and Honor (M/H#1-4), Subjects list for Specialization track (#1-4) EG: Engineering Subject, SC: Science Subject (offered combinedly by departments) (SVNIT Surat)

Sardar Vallabhbhai National Institute of Technology (SVNIT) Surat
Department of Physics
Five Years Integrated M.Sc. Physics

Sr. No.	Subject	Code	Scheme L-T-P	Credits (Min.)	Notional hours of Learning (Approx.)
	First Semester (1st year of MSc)				
1	Waves and Mechanics	PH101	3-1-0	4	85
2	Basic Electronics	PH103	3-0-2	4	85
3	Thermodynamics and Statistical Physics	PH105	3-1-0	4	70
4	Numerical Methods and Computer Programming	PH107	3-0-2	4	85
5	Mathematics for Physical Sciences I	MA123	3-1-0	4	70
6	Indian Value System and Social Consciousness	HS120	2-0-0	2	35
			Total	**22**	**430**
7	Vocational Training / Professional Experience (Optional) (Mandatory for Exit)	PHV01 / PHP01	0-0-10	5	200 (20 x 10)
	Second Semester (1st year of MSc)				
1	Electromagnetic Theory-I	PH102	3-1-0	4	70
2	Semiconductor physics	PH104	3-0-2	4	85
3	Mathematics for Physical Sciences II	MA118	3-1-0	4	70
4	Fundamentals of Electrical Engineering	EE110	3-0-2	4	85
5	English and Professional Communication	HS110	3-1-0	4	70
			Total	**20**	**380**
6	Vocational Training / Professional Experience (Optional) (Mandatory for Exit)	PHV02 / PHP02	0-0-10	5	200 (20 x 10)
	Third Semester (2nd year of MSc)				
1	Solid State Physics	PH201	3-0-2	4	85
2	Quantum Mechanics-I	PH203	3-1-0	4	70
3	Optics	PH205	3-0-2	4	85
4	State and Properties of Matter	CY205	3-1-2	5	100
5	Discrete Mathematical Structure	MA205	3-1-0	4	70
			Total	**21**	**410**
6	Vocational Training / Professional Experience (Optional) (Mandatory for Exit)	PHV03 / PHP03	0-0-10	5	200 (20 x 10)
	Fourth Semester (2nd year of MSc)				
1	Mathematical Methods in Physics	PH202	3-1-0	4	70
2	Classical Mechanics	PH204	3-1-0	4	70
3	Electromagnetic Theory-II	PH206	3-0-2	4	85
4	Laser and photonics	PH208	3-1-0	4	70
5	Data Structure	CS102	3-1-2	5	100
			Total	**21**	**395**
6	Vocational Training / Professional Experience (Optional) (Mandatory for Exit)	PHV04 / PHP04	0-0-10	5	200 (20 x 10)
	Fifth Semester (3rd year of MSc)				
1	Quantum Mechanics-II	PH301	3-1-0	4	70
2	Atomic and Molecular Physics	PH303	3-1-0	4	70

Subject Code: ##nXX; ##: Department Identity, n: Year, XX: Subject Sequence number XX: last digit 0 (subject offered in both ODD and EVEN semesters, XX: 01 to 30 – last digit ODD and EVEN for ODD and EVEN semesters (Mandatory Core), XX: 31 to 50 (Optional Core), XX: 51 to 99 (Elective), Subjects list for Minor and Honor (M/H#1-4), Subjects list for Specialization track (#1-4) EG: Engineering Subject, SC: Science Subject (offered combinedly by departments) (SVNIT Surat)

Sardar Vallabhbhai National Institute of Technology (SVNIT) Surat
Department of Physics
Five Years Integrated M.Sc. Physics

3	Fundamentals of Artificial Intelligence	CS300	3-0-2	4	85
4	Elective	PH3AA	3-X-X	3/4	55/70/85
5	Elective	PH3BB	3-X-X	3/4	55/70/85
			Total	**18-20**	**335-395**
6	Vocational Training / Professional Experience (Optional) (Mandatory for Exit)	PHV05 / PHP05	0-0-10	5	200 (20 x 10)
	Sixth Semester (3rd year of MSc)				
1	Statistical Mechanics	PH302	3-1-0	4	70
2	Digital Electronics	PH304	3-0-2	4	85
3	Interpretative Molecular Spectroscopy	CY302	3-1-0	4	70
4	Elective	PH3CC	3-X-X	3/4	55/70/85
5	Elective	PH3DD	3-X-X	3/4	55/70/85
			Total	**20**	**335-395**
6	Vocational Training / Professional Experience (Optional) (Mandatory for Exit)	PHV06 / PHP06	0-0-10	5	200 (20 x 10)
	Seventh Semester (4th year of MSc)				
1	Plasma Physics	PH401	3-1-0	4	70
2	Nuclear Physics	PH403	3-0-2	4	85
3	Condensed Matter Physics	PH405	3-1-0	4	70
4	Elective	PH4AA	3-X-X	3/4	55/70/85
5	Elective	PH4BB	3-X-X	3/4	55/70/85
			Total	**20**	**335-395**
6	Vocational Training / Professional Experience (Optional) (Mandatory for Exit)	PHV07 / PHP07	0-0-10	5	200 (20 x 10)
	Eighth Semester (4th year of MSc)				
1	Computational Physics	PH402	3-0-4	5	115
2	Particle Physics	PH404	3-1-0	4	70
3	Elective	PH4CC	3-1-0	4	70
4	Elective	PH4DD	3-X-X	3/4	55/70/85
5	Elective	PH4EE	3-X-X	3/4	55/70/85
			Total	**20-21**	**365-425**
	Ninth Semester (5th year of MSc)				
1	Dissertation Final (FD)	PHP09	0-0-40	20	800 (20 X 40)
			Total	**20**	**800**
	Tenth Semester (5th year of MSc)				
1	Dissertation Final (FD)	PHP10	0-0-40	20	800 (20 X 40)
			Total	**20**	**800**

Sr. No.	**Elective**	**Code**	**Scheme L-T-P**
1	Basic Course on Relativity	PH351	3-1-0
2	Material Science	PH352	3-1-0
3	Basic of Astronomy and Astrophysics	PH353	3-1-0

Subject Code: ##nXX; ##: Department Identity, n: Year, XX: Subject Sequence number XX: last digit 0 (subject offered in both ODD and EVEN semesters, XX: 01 to 30 – last digit ODD and EVEN for ODD and EVEN semesters (Mandatory Core), XX: 31 to 50 (Optional Core), XX: 51 to 99 (Elective), Subjects list for Minor and Honor (M/H#1-4), Subjects list for Specialization track (#1-4) EG: Engineering Subject, SC: Science Subject (offered combinedly by departments) (SVNIT Surat)

Sardar Vallabhbhai National Institute of Technology (SVNIT) Surat
Department of Physics
Five Years Integrated M.Sc. Physics

4	Solar Cell Technology	PH354	3-1-0
5	Nanoscience and Nanotechnology	PH355	3-1-0
6	Electronics and optical communication	PH356	3-1-0
7	Remote sensing	PH357	3-1-0
8	Many Body Physics and Relativistic Quantum Mechanics	PH358	3-1-0
9	Astrophysics and space science	PH451	3-1-0
10	Microprocessor and Microcontrollers	PH452	3-0-2
11	Characterization Techniques	PH453	3-0-2
12	Density Functional Theory	PH454	3-1-0
13	Elementary Excitation in Solids	PH455	3-1-0
14	Green's Function and Partial Differential Equations	PH456	3-1-0
15	Simulations and Modelling	PH457	3-1-0
16	Advanced Crystallography	PH458	3-1-0
17	Electromagnetic Communication	PH459	3-1-0
18	Global Navigation Satellite System	PH460	3-0-2
19	Quantum Field Theory	PH461	3-1-0
20	Thin Films and Vacuum Technology	PH462	3-1-0
21	Nuclear Science and Techniques	PH463	3-0-0
22	Non Destructive Testing	PH464	3-0-0
13	Microwave Plasma	PH465	3-0-0

Subject Code: ##nXX; ##: Department Identity, n: Year, XX: Subject Sequence number XX: last digit 0 (subject offered in both ODD and EVEN semesters, XX: 01 to 30 – last digit ODD and EVEN for ODD and EVEN semesters (Mandatory Core), XX: 31 to 50 (Optional Core), XX: 51 to 99 (Elective), Subjects list for Minor and Honor (M/H#1-4), Subjects list for Specialization track (#1-4) EG: Engineering Subject, SC: Science Subject (offered combinedly by departments) (SVNIT Surat)

M.Tech. (Structural Engg)
CEST220: Structural Health Monitoring

L	T	P	C
3	-	-	3

Course Outcomes (COs):

At the end of the course, the students can able to

1. Demonstrate the fundamentals of SHM
2. Understand the sensor and sensing technology
3. Analysis of the data derived from SHM
4. Apply suitable piezoelectric materials and smart materials
5. Identify techniques to fix the structural damages

Unit	Topics	Hours
1	• **Structural Health** Definition, Principles, Factors affecting Health of Structures, Causes of Distress, Regular Maintenance	3
	• **Introduction to SHM** Aims of structural health monitoring, development of SHM methods, SHM systems and its components, SHM strategy and method, potential benefits of SHM	5
2	• **Sensor and sensing technology for SHM** Sensor types, sensor measurements in structural monitoring, fibre optic sensors, wireless sensors, optimum sensor selection and placement, some case studies	7
3	• **Data acquisition, transmission and management** Data acquisition systems, data transmission systems, data processing systems, data management systems, case study	12
4	• **Structural damage identification techniques** Acoustic emission, ultrasound, Guided waves, thermography, electromagnetic methods, capacitive methods, laser doppler vibrometer, global positioning system, comparison of NDT and SHM, signal processing for damage detection, data based versus modal based techniques, development of vibration-based methods. IoT applications in SHM	12
5	• **Smart materials & structures** Concept of Smart Materials & Smart Structures with SHM, Basics of Smart Materials like Piezoelectric, Shape Memory Alloys, ER & MR Fluids etc.	6
	Total Hours	45

BOOKS RECOMMENDED:

1. Bhalla, S., Moharana, S., Talakokula, V. and Kaur, N. (2017), Piezoelectric Materials: Applications in SHM, Energy Harvesting and Biomechanics, Ane Books Pvt. Ltd. (Indian Edition)

Annexure 5.1
of the 62nd IAAC Meeting

M. Tech. (PEED)	
Graduates of this programme will be able to	
PEO	1. develop and implement power electronic solutions to ensure sustainable growth of the nation by serving in government/industry or other organizations. 2. design products to meet socio-economic needs of the country/world by innovative ideas. 3. disseminate their innovative ideas through effective oral communications and written presentations adopting lifelong learning attitude with integrity and ethics.
	Graduates of this programme will be able to
PSO	1. develop and assess the performance of various models of power electronic converters and electrical drives. 2. apply modern control strategies in various applications of power electronics. 3. design real time testing systems for various applications of power electronic converters and electrical drives.

07/03/23 7/3/23

M. Tech. (Power System)

Programme Educational Objectives (PEOs)

Graduates of M. Tech. in Power System program will be able

1. to solve power system problems by employing contemporary techniques, tools and resources.
2. to develop products to meet social economic demand by innovative ideas, take up research and development work in the field of power and energy engineering.
3. to communicate effectively through oral and written presentation of technical reports, adopting lifelong learning with integrity and ethics.

Program-specific Outcomes (PSOs)

At the end of the program, students will have the ability to:

1. Analyse and assess the performance of different types of generation, transmission, distribution and protection mechanisms in power systems
2. Design and test various components of power systems in integrated way;
3. Deploy control strategies for various operations of power systems.

07/03/23

7/3/23

M.Tech. I (Semester – II)	L	T	P	C
EL802: RESEARCH METHODOLOGY	4	0	0	4

Course Outcomes At the end of the course, students will	
CO1	to understand the different research methodologies in different areas.
CO2	be able to apply the concepts in writing, presentation, and simulating different experiments.
CO3	be able to analyze the proposed work with existing approaches in the literature and interpret the research design through project development and case study analysis using appropriate tools.
CO4	be able to execute the technical presentation, and organization in writing the report and papers.
CO5	be able to design the algorithms and proof learned and communicate effectively through proper organization and presentation.

Course Contents	
INTRODUCTION	**(04 Hours)**
Research: Definition, Characteristics, Motivation and Objectives, Research Methods vs Methodology, Types of Research – Descriptive vs Analytical, Applied vs Fundamental, Quantitative vs Qualitative, Conceptual vs Empirical.	
METHODOLOGY	**(06 Hours)**
Research Process, Formulating the Research Problem, Defining the Research Problem, Research Questions, Research Methods vs. Research Methodology.	
LITERATURE REVIEW	**(06 Hours)**
Review Concepts and Theories, Identifying and Analysing the Limitations of Different Approaches.	
FORMULATION AND DESIGN	**(06 Hours)**
Concept and Importance in Research, features of a Good Research Design, Exploratory Research Design, Concept, Types and Uses, Descriptive Research Designs, Concept, Types and Uses, Experimental Design: Concept of Independent & Dependent Variables.	
DATA MODELING AND SIMULATIONS	**(10 Hours)**
Mathematical Modelling, Modelling from first principles, data-driven models, System identification techniques, methods for data classification and feature extraction, some numerical methods, regression etc. Introduction to MATLAB, Simulation Skills, Experimental skills.	
TECHNICAL WRITING AND TECHNICAL PRESENTATIONS	**(06 Hours)**
Technical writing and presentation in Latex, MS Word	
CREATIVITY AND ETHICS IN RESEARCH, INTELLECTUAL PROPERTY RIGHTS	**(06 Hours)**
Policy of Ethical Conduct, Regulatory Norms, Codes and Policies for Research Ethics, Ethical Decision Making, Research Misconduct.	
TOOLS AND TECHNIQUES FOR RESEARCH	**(08 Hours)**
Methods to Search Required Information Effectively, Reference Management Software, Software for Paper Formatting, Software for Detection of Plagiarism.	
DISCUSSION AND DEMONSTRATION OF BEST PRACTICES	**(04 Hours)**
Case Studies	
(Total Contact Time: 56 Hours)	

BOOKS RECOMMENDED (LATEST EDITION)

1. David Kmiec, Bernadette Longo, The IEEE Guide to Writing in the Engineering and Technical Fields, Wiley-IEEE Press, 2017, Online ISBN: 9781119070269.
2. A report from IEEE Authorship Series: How to write for technical periodicals and Conferences.

3. John W. Creswell, "Research Design: Qualitative, Quantitative, and Mixed Methods Approaches", SAGE Publications Ltd.
4. C.R. Kothari, "Research Methodology: Methods and Techniques", New Age International Publishers.
5. David Silverman, "Qualitative Research", SAGE Publications Ltd.
6. Norman K. Denzin and Yvonna Sessions Lincoln, "Handbook of Qualitative Research", SAGE Publications Ltd.
7. Michael Quinn Patton, "Qualitative Research and Evaluation Methods", SAGE Publications Ltd.

-*PROGRAM SPECIFIC OUTCOMES (PSOs)

- PSO1: To identify, formulate and investigate various problems of electrical engineering.
- PSO2: To analyse and solve the problems related to electrical engineering using modern techniques and tools.
- PSO3: To design, simulate, and make prototype of electrical equipment like, electrical machines and drives, power transmission and distribution, power electronic converters and control system.

PROGRAM EDUCATIONAL OBJECTIVE (PEOs)

- PEO1: To model, design and develop a product, component or process in the field of electrical engineering to meet social and economic demand.
- PEO2: To pursue higher education in Engineering, Science, Management, Research and Development work in the field of electrical engineering.
- PEO3: To communicate effectively through oral and written presentation of technical reports, adopting lifelong learning with integrity and ethics.

4/5/23

Engineering Science
ESXXX

L	T	P	Credit
2 (C)	0	2	03

Scheme

CO1 Acquire basic knowledge of water chemistry

CO2 Apply the basic concept of materials chemistry in civil engineering applications

CO3 Understand corrosion chemistry to protect different metals from corrosion

- **WATER** **(08 Hours)**

Structure of water, physical and chemical properties, Hydrogen bonding, Specifications for water in industries, types of water (raw water, cooling water, boiler water, nuclear water), Hardness of water, Estimation and units of Hardness, Boiler feed water, Boiler Problems - Scales & Sludge, Priming, Foaming, Carryover, Caustic Embrittlement, Boiler corrosion, Desalination. Water softening (lime-soda, zeolite and ion-exchange) methods.

- **POLYMER** **(06 Hours)**

Introduction of Polymers: Classification of polymers, nomenclature, functionality in polymers, number and weight average molecular weight, molecular weight distribution (PDI), Chain Architecture (Linear/Branched, Tacticity, Isomerism), homopolymers, copolymers, graft copolymers and their characteristic properties in reference to their applications. Types of polymerization: addition, condensation, chain growth and step growth. Polymerization techniques:bulk, suspension and emulsion polymerization. Moulding constituents of Polymer, Moulding (Injection, Extrusion and Compressing) methods.

- **CHEMISTRY OF MATERIALS** **(11Hours)**

Alloys: Introduction, Necessity of making alloys, classification, Metal-Metal alloy: Brass (properties and applications), Metal-Non-metal alloy: Steel (properties), Composites: Introduction, classification, particulate composites, structural composites (Laminar and Sandwich), Advantages and applications of Composites, Nanomaterials – properties synthesis (sol-gel) and applications.
Cement Chemistry: Cement– its constituents and their structures, classification of cement, hydration process and importance of the products of hydration, chemistry of pozzolanic reactions. Analysis of Portland cement with reference to insoluble residue, total silica, sesquioxides, iron, lime and manganese. Role of calcium hydroxide in cement.
Soil Chemistry: Chemical composition of soils, types of clay minerals, soil colloids, diffused double layers, sorption processes, cation and base exchange phenomenon in soils, isomorphous substitution.

- **CORROSION AND ITS CONTROL** **(05 Hours)**

Introduction, types and mechanism of (Chemical and Electrochemical) corrosion, Types of Electrochemical corrosion (Galvanic, Pitting, Crevice), Passivity, Galvanic series, Factors influencing corrosion, Protective measures against corrosion: (i) Modification of the environment
(ii) Modification of the properties of the Metal (iii) Prevention of corrosion by Materials selectionand Design (iv) Other corrosion prevention methods.

(Total Lecture Hours: 30)

PRACTICALS:

1. Iodometric determination of Cu in Brass sample.
2. Complexometric determination of hardness of water.
3. Estimation of COD in waste water.
4. Determination of DO in waste water.
5. Estimation of CaO in cement solution.
6. Estimation corrosion of metals (Fe and Zn) by agar gel.
7. Estimation of Ca^{2+} and Mg^{2+} ions in dolomite.
8. Manganometric determination of Iron(II) ion.
9. Determination of pH of soil sample

BOOK RECOMMENDED:-

1. Jain P.C. and Jain M. 'Engg. Chemistry' Dhanpat Rai Publishing Co. New Delhi, 15th Edition2006.
2. Chawla S., 'A Textbook of Engineering Chemistry', Dhanpat Rai & Co., Latest Edition, 2015.
3. Tripathy S.K., Pandhy A.K. and Panda A.K. 'Material Science & Engineering', ScitechPublications (India) Pvt. Ltd., 2nd Edition, 2009.
4. Sposito, G., "Chemistry of Soils", 2nd Ed., Oxford University Press, 2008.
5. Taylor, H.F.W., Cement Chemistry, 2nd Ed. (reprinted), Thomas Telford Services Ltd., London, 2004.
6. Nad, A. K., Mahapatra, B., Ghoshal, A. An Advanced Course In Practical Chemistry, New Central Book Agency Pvt. Ltd., 2022.

Applied Chemistry

L	T	P	Credit
3	0	2	04

Course outcomes:

CO1	Acquaint with the purpose and operational steps of key water treatment processes used to improve water quality
CO2	Adapt corrosion chemistry to protect various metals used in industry from corrosion
CO3	Adapt polymer chemistry process in industrial applications
CO4	Understand the characteristics, synthesis and applications of different materials in a wide range of sectors
CO5	Understand interfaces and colloids with practical examples relevant for the environment and petrochemical industry.
CO6	Acquire skills to carry out the conductometric and pH titrations
CO7	Understand the importance of electroanalytical techniques in chemical analysis.
CO8	Perform the quantitative determination of various ions by using instrumentation methods

- **CHEMICAL ANALYSIS OF WATER** **[8 Hours]**
  Specifications for water in industries, types of water (raw water, cooling water, boiler water, nuclear water), cooling water (Langelier Index and its treatment); Hardness of water, Estimation and units of Hardness, Boiler feed water, Boiler Problems - Scales & Sludge, Priming, Foaming, Carryover, Caustic Embrittlement, Boiler corrosion, Desalination. Water softening (lime-soda, zeolite and ion-exchange) methods.
- **POLYMERS** **[6 Hours]**
  Introduction and classification of polymers, nomenclature, functionality in polymers, number and weight average molecular weight, degree of polymerization and molecular weight distribution (PDI), Chain Architecture (Linear/Branched, Tacticity, Isomerism), homopolymers, copolymers, graft copolymers; Types of polymerization: addition, condensation; Engineering polymers and applications, Biopolymers, conducting polymers
- **CHEMISTRY OF MATERIALS** **[6 Hours]**
  Engineering materials and its classification, Ferrous metals and alloys (steel and stainless steels), Non-ferrous metals and alloys, their properties and applications; Composites-Introduction, classifications, structure-property relations and applications.
- **CORROSION** **[6 Hours]**

Introduction, types and mechanism of (Chemical and Electrochemical) corrosion, Types of Electrochemical corrosion (Galvanic, Pitting, Crevice), Pourbiax diagram, Passivity, Polarization, Galvanic series, Factors influencing corrosion, Corrosion control

- **SURFACE CHEMISTRY** **[8 Hours]**
  Liquid- liquid and solid liquid interfaces – contact angle, wetting and spreading, adhesion and cohesion, contact angle measurements; Colloids and its types, lyophilic and lyophobic sols; characteristics, preparations, purification and properties (optical, kinetic and electrical) and applications. Associated colloids (surfactants), emulsions (role, types and preparation) and gels (types and properties).
- **BASIC INSTRUMENTATION TECHNIQUES** **[8 Hours]**
  Principles and instrumentations: Conductometry, Colorimetry, Potentiometry, pH-metry; UV-Visible spectroscopy. Electrochemical measurements: methods and instruments.

[Total Lecture Hours: 42]

List of Practicals:

1. Determination of hardness of water
2. Estimation of COD
3. Determination of DO
4. Determination of Cu in brass alloy.
5. Acid-base pH metric titration
6. Trimetric determination of l - Ascorbic acid (Vitamin-C).
7. Estimation of Cl^- ion.
8. Estimation of corrosion by weight loss method
9. Conductometric titration to determine the strength of strong acid.
10. Demonstration: Concentration determination of Co as a Pollutant using Spectrophotometer.

BOOK RECOMMENDED:-

1. Jain P.C. and Jain M. 'Engg. Chemistry' Dhanpat Rai Publishing Co. New Delhi, 15th Edition 2006.

2. P. Atkins, Paula J. D., "Atkin's Physical Chemistry", Oxford (Indian Edition), Oxford University Press, 2012.

3. Tripathy S.K., Pandhy A.K. and Panda A.K. 'Material Science & Engineering', Scitech Publications (India) Pvt. Ltd., 2nd Edition, 2009.

4. Vogel A. I. and Mendham J., 'Vogel's Textbook of Quantitative Chemical Analysis Hall, 6th Edition, 2002. 5. Sharma B. K. 'Engg. Chemistry', Krishana Prakashan Media (P) Ltd, 2008

5. D. A. Skoog, F. J. Holler, T. A. Nieman, "Principles of Instrumental Analysis", sixth edition, 2006. 5. B. K. Sharma, "Engineering Chemistry", Krishna Prakashan Media (P) Ltd., Meerut, 2001.

L	T	P	C
3	0	2	4

B. Tech – I

Fundamental Physics (PH1)

1. Course Outcomes (COs)

In the end of the semester, the students will be able to:

COURSE OUTCOMES		COGNITIVE LEVELS
CO1	Recall the basic principles of physics related to solid-state physics, quantum mechanics, photonics, and electromagnetism.	Remembering (C1)
CO2	Illustrate the various physical phenomena with interpretation based on the mathematical expressions involved.	Understanding (C2)
CO3	Apply the concepts/principles to solve the problems related to solid-state physics, quantum mechanics, photonics, and electromagnetism.	Applying (C3)
CO4	Analyze and examine the solution to the problems using physical and mathematical concepts involved.	Analyzing (C4)
CO5	Interpret and justify the results obtained from the experiments.	Evaluating (C5)

2. Syllabus

- SOLID-STATE PHYSICS (12 hours)

Crystallography – Crystalline and amorphous solids, Lattice and unit cell, Seven crystal system and Bravais lattices, Symmetry operation, Miller indices, Atomic radius, Coordination number, Packing factor calculation for SC, BCC, FCC, Bragg's law of X-ray diffraction, Rotating crystal method, Laue Method, Powder crystal method. *Nanomaterials* – Introduction, Synthesis of nano materials, Top down and Bottom up approach, Ball milling, PVD method, Applications. *Superconductivity* – Meissner effect, Type-I and Type-II superconductors. *Semiconductor physics* – Introduction, Direct and indirect band gap semiconductors, Intrinsic and extrinsic semiconductors, Law of Mass action, Charge neutrality, Hall effect.

- QUANTUM MECHANICS (8 hours)

Inadequacy of classical mechanics (black body radiation, photoelectric effect, bright line optical spectra), Electron diffraction, de Broglie concept of matter waves, Wave and Particle duality of radiation and matter, Heisenberg's uncertainty principle, Interpretation of wavefunction and probability density, Postulates of quantum mechanics, Schrodinger's wave equation, Eigenvalues and eigenfunctions, Superposition principle, Particle confined in one dimensional infinite potential box.

- PHOTONICS (10 hours)

Einstein's theory of matter radiation interaction and A & B coefficients, Properties of laser, Spontaneous and stimulated emission, Amplification of light by population inversion, Types of lasers: solid-state laser (Neodymium), gas lasers (CO_2), Optical fibre- principle [TIR] - types-material, mode, refractive index-Fibre loss-Expression for acceptance angle and numerical aperture, Application-Communication.

- ELECTROMAGNETISM (12 hours)

Overview of electrostatics and magnetostatics – divergence and curl of electric field, Gauss law and its applications, polarization, Internal field, Clausius-Mossotti relation, Lorentz force, Biot-Savart's law and

Ampere's law, Divergence and Curl of Magnetostatic fields, Magnetic materials, Magnetization, Faraday's law, Maxwell's equations, Continuity Equation, Wave solution of Maxwell Equations.

Total contact time -- 42 hours

Books Recommended:

1. C. Kittel, Introduction to Solid State Physics, John-Wiley 2016.
2. A. Beiser, Concept of the Modern Physics, McGraw-Hill 2008
3. R. Eisberg and R. Resnick, "Quantum Physics of Atoms, Molecules, Solids, Nuclei and Particles", John-Wiley, 2nd Edition, 2006
4. D. J. Griffiths, Introduction to electrodynamics, Pearson India.
5. R. Resnick and D. Halliday Physics (Part I & II), Wiley 2007.

Foreign language course in German

L	T	P	C
3	0	0	3

1. Course Outcomes (COs)

At the end of the course the students will be able to:

CO1	Interpret texts written in German
CO2	Apply grammar rules correctly
CO3	Choose and employ appropriate words for communication
CO4	Analyze and infer from written, audio and video texts in German
CO5	Demonstrate awareness and interest in German culture

2. Syllabus

- **Fundamentals of the language and introduction to the culture:** **(8 hours)**
  International words, the alphabet with unique German letters and pronunciation, numbers, names of days of the week, months, seasons, greetings of different types, vocabulary lists like food items, vehicles, common names used in Germany, names of cities and countries.

- **Grammar:** **(8 hours)**
  Nouns, articles and types, negation, verbs conjugation and types, pronouns and types, plurals, conjunctions, adjectives, opposites, sentence word order, sentence types, sentence case, prepositions, tenses.

- **Listening:** **(6 hours)**
  Dictation, native speakers tape scripts consisting dialogues, small talks, songs.

- **Speaking:** **(7 Hours)**
  Drilling, introduction of self and others, asking for information and giving it, telephonic conversations, dialogues in different day to day situation like ordering food at a restaurant, shopping etc., small talk, hobbies, work and profession, telling the time.

- **Reading:** **(6 Hours)**
  Comprehension unseen passages with tasks like question answers, true or false, newspaper advertisements, small texts, dialogues

- **Writing:** **(8 Hours)**
  Making sentences using vocabulary, forming questions, small passages, letters and types, E-mails.

- **Film Viewing:** **(2 Hours)**
  Frühstück bei den Berg, Einkaufen, Hast du Zeit?

(Total Contact Time - 45 Hours)

- **S`ouvrir à la culture (Open up to culture)** **(9 hours)**

GRAMMAR- Les adjectifs démonstratifs (Demonstrative adjectives); Les verbes finir, sortir (The verbs to finish, to leave); Les adverbes de fréquence (Adverbs of frequency)
Le passé composé avec « être et avoir » (The past tense with "to be and to have"); L`imparfait (The imperfect). VOCABULARIES - Les sorties (The outings); La famille (Family); L`art (Art); Les vêtements et les accessoires (Clothing and accessories)

(Total Contact Time- 45 Hours)

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3. Reference Books:

Marie-Noël Cocton and Dorothée Dupleix, *SAISON 1 A1+ Méthode de Français*, Didier (Goyal) 2017.

J. Girardet and J. Pécheur, *ECHO A1+ Méthode de Français*, Clé International, 2017.
Annie Berthet, Catherine Hugot et al, *Alter Ego*, Hachette Publisher, 2006;
Annie Berthet, Catherine Hugot et al., *Alter Ego, A1 – Cahier d'activités* - Hachette Publisher, 2006

Foreign language course in French

L	T	P	C
3	0	0	3

1. Course Outcomes (COs)

At the end of the course the students will be able to:

CO1	Interpret texts written in French
CO2	Apply grammar rules correctly
CO3	Choose and employ appropriate words for communication
CO4	Analyze and infer from written, audio and video texts in French
CO5	Demonstrate awareness and interest in French culture

2. Syllabus

- **Mes cinq sens en action (My five senses in action)** **(9 hours)**

GRAMMAR- S`appeler, être, avoir, (To be called, to be, to have), Les articles définis. (Definite articles), Conditionnel de politesse:"Je voudrais", (Polite conditional: "I would like") VOCABULARIES- Les formules de salutations, Greeting formulas); L`alphabet (The alphabet); Quelques objets (Some objects); Les nationalités (Nationalities); Quelques lieux (Some places);Les pays (The countries); Les couleurs (Colors);Les nombres de 0 à 69. (Numbers from 0 to 69); Les jours de la semaine (The days of the week); Les mois de l'année (The months of the year); Les émotions (The emotions) ;Quelques consignes de classe(Some class instructions)

- **S`ouvrir aux autres** (Open up to others) **(9 hours)**

GRAMMAR- Les prépositions de lieu-1 (Prepositions of place-1); Les verbes en –er (The verbs in "er"); La négation (1) (Negation-1); Les articles indéfinis (The indefinite articles); Les questions (The questions); Les pronoms personnels (Personal pronouns). VOCABULARIES- Les professions (Professions); Quelques objets (Some objects); Les langues (Languages); Les nombres de 70 à 1000 (Numbers from 70 to 1000)

- **Partager son lieu de vie (Share your place of life)** **(9 hours)**

GRAMMAR- Le genre et le nombre des noms (Gender and number of nouns); Les verbes venir et aller (The verbs come and go); Le genre et le nombre des adjectifs (Gender and number of adjectives); Les adjectifs possessifs (Possessive adjectives); Les prépositions de lieu-2 (Prepositions of place-2). VOCABULARIES- L`habitat (The habitat); Les pièces, l'équipement (The rooms, the equipment); La description physique (The physical description); Les qualités et les défauts (The qualities and the defects)

- **Vivre au quotidien (Living everyday)** **(9 hours)**

GRAMMAR- Les articles contractés (The contracted articles); Les verbes: vouloir, pouvoir, devoir (The verbs: to want, to be able, have to); L`adjectif interrogatif (The interrogative adjective); Les verbes pronominaux (Pronominal verbs); Le futur proche (The near future); Le pronom « on » (The pronoun "on"). VOCABULARIES- Le temps libre et les loisirs (Free time and leisure); Les saisons (Seasons); Les activités quotidiennes (The daily activities); Le temps: le matin/ le soir… (Time: morning/evening…); L`heure (Time)

Recommended Books:

1. Netzwerk - Stefanie Dengler, Paul Rusch, Helen Schmitz, Tanja Sieber. Klett -Langenscheidt/Goyal Publishers. 2015
2. Learn German Through English by Vrinda Kulkarni. Tejal Prakashan, 2005/2013
3. MyGermanConnect by Vrinda Kulkarni, Flystone Publication, 2023
4. Tangram aktuell 1 - Hueber/Goyal Publishers, 2011

List of open learning websites:

https://www.open.edu/openlearn/education-development/university-ready/free-online-german-courses
https://www.deutsch-lernen.com/learn-german-online/beginners/lesson_3.php

MEMORANDUM OF UNDERSTANDING
(MoU)

BETWEEN

SARDAR VALLABHBHAI
NATIONAL INSTITUTE OF TECHNOLOGY
SURAT

&

भारतीय प्रौद्योगिकी
संस्थान जम्मू
INDIAN INSTITUTE OF
TECHNOLOGY JAMMU

विद्याधनं सर्वधन प्रधानम्

INDIAN INSTITUTE OF TECHNOLOGY
JAMMU

FOR

ACADEMIC, RESEARCH COLLABORATIONS &
STUDENTS EXCHANGE PROGRAMMES

Place: Jammu **Date: 08 June, 2023**

MEMORANDUM OF UNDERSTANDING

BETWEEN

SARDAR VALLABHBHAI NATIONAL INSTITUTE OF TECHNOLOGY, SURAT

AND

INDIAN INSTITUTE OF TECHNOLOGY, JAMMU

This is a Memorandum of Understanding (MoU) **Dated 8th June 2023**

between

Sardar Vallabhbhai National Institute of Technology, Surat (SVNIT, Surat), a premier academic institution of Repute, incorporated under National Institute of Technology Act, 2007, having its permanent campus and office at **SVNIT, Ichchhanath, Dumas Road, Surat – 395 007 Gujarat**

and

The Indian Institute of Technology Jammu, recognized as an "Institute of National Importance" under the "Institutes of Technology Act" of 1961, is an autonomous public higher education Institute funded by the Government of India, and functions under the governance of the IIT Council. IIT Jammu was inaugurated on 6th August 2016 and is located in its permanent campus and office at **IIT Jammu, Jagti, NH-44 , PO Nagrota, Jammu - 181 221 J&K**

Sardar Vallabhbhai National Institute of Technology, Surat (**SVNIT, Surat**) and Indian Institute of Technology Jammu (**IIT Jammu**) have agreed to the following protocols governing their collaboration on academic and research activities.

1. Scope

The scope of collaboration on academic and research activities in this Memorandum of Understanding includes the following categories.

(i) It is expected that this collaboration will in due course lead to collaborative research projects in areas of common interest, joint supervision of PhD students, organization of joint workshops and seminars, etc.

(ii) Exchange of students and faculty, exchange of academic information, scholarly information, materials and publications as per the rules of both the institutes and consent of involved persons.

(iii) Admission of SVNIT, Surat students for direct or early MTech./ Ph.D. at IIT Jammu/Joint PhD/PG, subject to the existence of the policy approved by the appropriate body of the host institution. The applicable rules and regulations shall be determined and as approved by the respective Senates of both the institutes in concurrence with one another.

(iv) Creating a shared pool of faculty members in each basic discipline at IIT Jammu and the SVNIT Surat. Such a shared pool of faculty expertise is meant to facilitate the reciprocal utilization of the expertise of faculty members at one institute for teaching courses, conducting joint research, submission of joint project proposals, and other collaborative academic activities at the other institute. The *modus operandi* of these joint activities shall be laid out after mutual approval of terms and conditions formulated and mutually agreed upon by the two institutions

2. Research Collaboration

Faculty from both Institutions will collaborate in the supervision of exchange students and in joint research in disciplines of mutual interest. All such joint research activities will be governed by the terms as given below:

2.1 Proposals for collaborative research work under this Memorandum will be submitted with the prior approval of the Head of each institution, or his/her nominee.

2.2 Each institution will nominate one of its members as its representative in charge of the cooperative programme. Individual programmes of work under this Memorandum will be jointly planned and conducted by the nominees of both Institutes.

2.3 Progress of work of any individual programme will be reviewed and approved by designated authorities of both Institutes.

2.4 The final approval of any project will depend on the availability of guaranteed support funds.

2.5 Neither SVNIT, Surat nor IIT Jammu will be held responsible for any liability to the other party, and neither party shall be required to purchase any insurance against loss or damage to any property due to activities to which this agreement relates.

2.6 Every collaboration will have its own agreement/contract which addresses issues such as IPR, funding pattern, usage policies of research facilities, disclosure of information etc.

3. Students and Faculty Exchange

Both the Institutes will encourage exchange of B.Tech, M.Tech students, and faculty, according to the terms laid out in this MoU. It is expected by both the parties that there will be a significant flow of students/faculty in both directions.

3.1 Students under the exchange programme will be classified as "Exchange students". The exchange students will be permitted to take courses on credit/audit, as well as participate in research activities/internships/project work.

3.2 In any such cases, prior consent of the teacher/project supervisors/research supervisors must be obtained. Such consent will take into account, among other things, whether the student has pre-requisites for the course/project.

3.3 Neither institution will levy admission or tuition fees on exchange students studying for a short duration in a particular semester. However, their short-term stay will be subject to lodging and boarding charges. The exchange visits of students for a full semester or more shall be decided on the basis of the terms and conditions mutually agreed upon by both the parties.

3.4 Course credits and grades earned will be determined by the home institution based on the grade report issued by the host institution.

3.5 The number of students and duration of stay will be worked out on a case-to-case basis.

3.6 Participants may not spend more than one year normally in the exchange programme.

3.7 Participants will adhere to the rules and regulations of the host institution and adjust to available resources by conforming to appropriate guidelines.

3.8 The faculty of SVNIT, Surat may also apply for suitable postdoctoral positions or any other similar opportunities available at IIT Jammu. Availing any such opportunity at IIT Jammu will be subject to administrative terms and conditions of SVNIT, Surat in regard to relieving the faculty of their regular duty in the parent institution.

Selection and Nomination

Applications will be invited from the students of SVNIT Surat for the exchange program. The selection and nomination of students is open throughout the academic year. The nomination of students shall be accompanied by

(i) Curriculum vitae

(ii) Statement of aptitude from a member of the student's school/faculty.

(iii) A specific outline of the programme of study intended at the host institution, and a statement of objectives of the study program.

It is presumed that, when a nomination is forwarded to the host institute, the home institute considers the nominated student to be adequately suitable for the proposed program, and consents to send the student if selected by the host institution.

The host institution will evaluate the nominations and determine their suitability for selection under the Exchange Programme.

Where the exchange student is pursuing a research or implementation project as part of the UG/PG/PhD, (or equivalent) degree programme, the host institution will provide a suitable faculty member to jointly assist (along with the supervisor in the parent Institution) the exchange student in formulating a research project, or jointly supervising the exchange student in the event that a research project has already been identified.

The host institution will inform the home institution of any academic or other problems that may arise for a student during the period of his/her residency in the host institution. The host institution in cooperation with the home institution will deal with and try to manage such problems.

Course Identification and Course Credit

The identification of courses available and offered at IIT Jammu, which may be considered equivalent in standard to courses taught at SVNIT Surat for the completion of credit requirements of the B. Tech. program of SVNIT, will be decided by the appropriate Academic Bodies of SVNIT, for each individual student, in concurrence with decisions taken by the relevant Departments/Disciplines at IIT Jammu.

4. Direct M.Tech/Ph.D Admission

Providing an opportunity to the students currently pursuing Bachelor of Technology (B.Tech.) SVNIT to explore the option to undertake courses in IIT Jammu and be considered for early admission to the M.Tech/PhD programme at IIT Jammu.

This scheme is intended to enable meritorious B.Tech students of SVNIT, Surat to carry out part of their studies, including project work, at IIT Jammu and offer an opportunity for direct admission to M.Tech/PhD without the need to qualify GATE or any other national level examination. This will enable qualified B. Tech. students into the M.Tech./PhD programme as early as the end of their 6th semester. Students under the Direct M.Tech./Ph.D. programme will be classified as "Visiting students" till the completion of their B.Tech. Degree. It is envisaged that this scheme will also help SVNIT, Surat students to enhance their chances of qualifying for the PMRF fellowship for PhD at IIT Jammu.

4.1 Student Selection: Under this scheme, SVNIT, Surat students who have a CGPA of 7.5 at the end of their sixth semester (end of third year), will be eligible to apply to IIT Jammu and complete their fourth year (7th and 8th semesters), at IIT Jammu, and then be considered for an early admission into the M.Tech./PhD program at IIT Jammu, subject to maintaining an overall CGPA of 7.5 in UG degree. However, having a CGPA of 7.5 does not guarantee their selection in the early-induction PhD program at the IITJMU.

All applications will be received through a portal set up for this purpose, through which they will submit their transcripts, and other academic records and achievements, and documentary evidence of any research or internship experience.

Upon selection, through a selection committee set up for the purpose, the students will have an offer of admission to the M.Tech./PhD program. The students are expected to demonstrate sufficient merit in course work, project work and/or research during their 7th and 8th semesters of B.Tech in order to continue towards getting the offer of admission into the M.Tech/PhD program. If the performance of the students is not up to the mark as per the guidelines of IIT Jammu, the students will be required to withdraw from the programme and return to their home institute, SVNIT, Surat, along with the credits earned. During their stay through the 7th and 8th semesters in IIT Jammu, the students will have the status of a Visiting Student, and will enjoy all the privileges of a regular full-time student at IIT Jammu.

4.2 Non-completion of B. Tech. Requirements at IIT Jammu

If a visiting student's performance is found unsatisfactory at the host institution (that is, unable to obtain the seven-grade point on the scale of 10), the student shall be transferred back to the home institution (SVNIT) along with credits earned. Such a student will not thereafter be considered for the early induction M.Tech/PhD programme at IIT Jammu. However, any such student back in SVNIT Surat will be entitled to get the B. Tech. degree, provided he/she completes all the requirements of the B. Tech. programme at SVNIT Surat.

4.3 During their stay through the 7th and 8th semesters in IIT Jammu, the students may take appropriate courses to satisfy the credit requirements for their B.Tech registration in their parent institution (SVNIT, Surat). IIT Jammu will certify the completion of the courses and the grades obtained, including project works done at IIT Jammu. The courses to be taken by the student at the host institution must be discussed well in advance with the relevant person of contact (preferably Dean of Academics) at the home institute, so that there is no repetition of any courses during the 7th or 8th Semester. It is the responsibility of the visiting student to coordinate with both the institutes and become familiar with the courses to be offered in the 7th and 8th semesters at IIT Jammu. They must ensure that these courses are suitable for the eventual award of B.Tech degree by SVNIT. In case a particular course has already been completed at the home institution, the host institute may offer alternative suitable courses after the respective HoDs/Faculty Advisors of both the institutions mutually agree on the appropriate choice of alternative courses.

4.4 Students will join the M.Tech/PhD program only after the completion of all graduation requirements at SVNIT, Surat, which would be typically in the month of July. All shortlisting criteria and admission criteria must be satisfied by the student at the time of joining PhD as well. Requirement of GATE will be waived, given that a minimum CGPA of 7.5 is a necessary condition for admission into the M.Tech/PhD programme of IIT Jammu.

4.5. For all academic/project work undertaken at IIT Jammu, transcripts will be provided with relevant credits. However, the calculation of these credits for the purpose of mapping them on to the letter grades will be left to SVNIT, Surat as per their grading system. Students may also undertake Pre-Ph.D. courses for earning additional credits for their M.Tech/PhD program, during their stay (in a regular semester) at IIT Jammu. Students can later claim these courses for their M.Tech/PhD degree requirement. However, such courses shall not be used for the award of B.Tech degree at SVNIT, and a certificate of commitment to this effect shall be submitted by the student.

4.6. Students coming under this program will not be entitled for participation in the Training & Placement process and campus placement for UG students in IIT Jammu or in SVNIT, Surat. This condition will be clearly stated in the letter offering admission.

4.7 By default, the admission is an entry into a "Direct PhD programme" for a student who satisfies all the prerequisites of admission laid down by IIT Jammu. However, a student will have an exit option, with an M. Tech. Degree, after two years of study in the programme, provided the credit requirements for the award of an M. Tech. Degree by IIT Jammu are fulfilled by the student.

5. Commencement, renewal, termination, and amendment

This MoU will come into force upon affixing of the signatures of the representatives of the partner institutions and will remain in effect for **five (5)** years. This MoU may be renewed upon its expiry, with the agreement of both the partner institutions. If either partner institution wishes to terminate

the MoU before five years, it must notify the other institution not less than six months prior to the expiry of the MoU.

This MoU or its renewal and the actions taken under it may be reviewed at any time. Modifications may be made by mutual agreement and any amendment or extension to the agreement may be formalized by the exchange of letters between the two parties.

Signed by:

(Prof. Manoj Singh Gaur)
Director
Indian Institute of Technology, Jammu
Jammu & Kashmir

Date: 08 June 2023

Institute Seal:

Signed by:

(Prof. Dr. Anupam Shukla)
Director
Sardar Vallabhbhai National Institute of Technology, Surat, Gujrat

Date: 08 June 2023

Institute Seal:

Annexure 3
of the 58th Meeting of the Senate

MEMORANDUM OF UNDERSTANDING (MoU)

BETWEEN

SARDAR VALLABHBHAI NATIONAL INSTITUTE OF TECHNOLOGY SURAT

&

ENGINEERS WITH
SOCIAL RESPONSIBILITY

DHIRUBHAI AMBANI INSTITUTE OF INFORMATION AND COMMUNICATION TECHNOLOGY (DA-IICT) GANDHINAGAR

FOR

ACADEMIC, RESEARCH COLLABORATIONS &

STUDENTS EXCHANGE PROGRAMMES

MEMORANDUM OF UNDERSTANDING

BETWEEN

SARDAR VALLABHBHAI NATIONAL INSTITUTE OF TECHNOLOGY, SURAT

AND

DHIRUBHAI AMBANI INSTITUTE OF INFORMATION AND COMMUNICATION TECHNOLOGY (DA-IICT), GANDHINAGAR

This is a Memorandum of Understanding (MoU) dated 20th February, 2023

between

Sardar Vallabhbhai National Institute of Technology, Surat (SVNIT, Surat), a premier academic institution of Repute, incorporated under National Institute of Technology Act, 2007, having its permanent campus and office at **SVNIT, Ichchhanath, Dumas Road, Surat - 395007 Gujarat**

and

Dhirubhai Ambani Institute of Information and Communication Technology (DA-IICT), Gandhinagar. The Act No. 6 of 2003 of the Gujarat Legislature provided for the establishment of the (DA-IICT), Gandhinagar and conferred on it the status of a University. (Gujarat Government Gazette Volume XLIV, Thursday, 6 March, 2003). On 30 November 2004, the DA-IICT was included in the list of Universities maintained by the University Grants Commission under Section 2(f) of the UGC Act, 1956 having its permanent campus and office at **DA-IICT, Near Indroda Circle, Gandhinagar 382 007, Gujarat**

Sardar Vallabhbhai National Institute of Technology, Surat (SVNIT, Surat) and Dhirubhai Ambani Institute of Information and Communication Technology (DA-IICT), Gandhinagar have agreed to the following protocols governing their collaboration on academic and research activities.

1. Scope

The scope of collaboration on academic and research activities in this Memorandum of Understanding includes the following categories.

(i) Academic and Research collaboration in the areas of mutual interest. It is expected that this collaboration will in due course lead to collaborative research projects, joint supervision of PhD students, organization of joint workshops and seminars, etc.

(ii) Exchange of students and faculty, exchange of academic information, scholarly information, materials and publications;

(iii) Admission of SVNIT, Surat students for direct PhD /early PhD at DA-IICT, Gandhinagar / Joint PhD/PG, subject to the existence of the policy approved by the appropriate body of the host institution.

2. Research Collaboration

Faculty from both Institutions will collaborate in the supervision of exchange students and in joint research in discipline of mutual interest. All such joint research activities will be governed by the terms as given below:

2.1 Proposals for collaborative research work under this Memorandum will be submitted with the prior approval of the Head of each institution, or his/her nominee.

2.2 Each institution will nominate one of its members as its representative in charge of the cooperative programme. Individual programme of work under this Memorandum will be jointly planned and conducted by the nominees of both Institutes.

2.3 Progress of work of any individual programme will be reviewed and approved by designated authorities of both Institutes.

2.4 The final approval of any project will depend on the availability of guaranteed support funds.

2.5 Neither SVNIT, Surat nor DA-IICT, Gandhinagar will be held responsible for any liability to the other party, and neither party shall be required to purchase any insurance against loss or damage to any property due to activities to which this agreement relates.

2.6 Every collaboration will have its own agreement/contract which addresses issues such as IPR, funding pattern, usage policies of research facilities, disclosure of information etc.

3. Students and Faculty Exchange

Both the Institutes will encourage exchange of B.Tech, M.Tech students, and faculty according to the terms laid out here. It is desired by both the parties that there will be significant flow of students/faculty in both directions.

3.1 Students under the exchange programme will be classified as special exchange students. Special exchange students will be permitted to take courses on credit/audit, as well as participate in research activities/internships/project work.

3.2 In any case, the consent of the teacher/project supervisors/research supervisors is required. Such consent will take into account among other things whether the student has pre-requisites for the course/project.

3.3 Neither institution will require admission nor tuition fees of exchange students for short duration; however, they will have to pay the lodging and boarding charges. The exchange visit of students for a semester or beyond will be decided based on the terms and conditions mutually decided by both the parties.

3.4 Course credits and grades earned will be determined by the home institution based on the grade report from the host institution.

3.5 The number of students and duration of stay will be worked out on a case to case basis.

3.6 Participants may not spend more than one year normally in the exchange programme.

3.7 Participants will be subjected to the rules and regulations of the host institution and availability of the resources.

3.8 The faculty of SVNIT, Surat may also apply for suitable postdoc positions/any other opportunities available at DA-IICT, Gandhinagar subject to other terms and conditions of SVNIT, Surat for relieving the faculty.

Selection and Nomination

The selection and nomination of students is open throughout the academic year. The student nomination should be accompanied by

(i) Curriculum vitae
(ii) Statement of aptitude from a member of the student's school/faculty.
(iii) A specific outline of the programme of study at the host institution and a statement of objectives of the students.

When a nomination is forwarded by the home institution, it is presumed that the sending Institution considers the students suitable for the proposed program and consents to send the students if selected by the host institution.

The host institution will evaluate the nominations and determine their suitability for selection under the student Exchange Programme.

Where the exchange student is pursuing a research or implementation project as part of the UG/PG/PhD, (or equivalent) degree programme, the host institution will provide a suitable faculty member to jointly assist (along with supervisor in the parent Institution) the exchange student in formulating research project or jointly supervising the exchange student in the event that a research project has already been identified.

The host institution will inform the home institution of any academic or other problems that may arise during the period of student's residence in the host institution. The host institution with the home institution will deal with such problems.

4. Direct Ph.D Admission

Providing an opportunity to the students currently pursuing Bachelor of Technology (B.Tech.) to explore the option to undertake courses in DA-IICT, Gandhinagar and be considered for early admission to the PhD programme at DA-IICT, Gandhinagar.

This scheme is intended to enable meritorious Sardar Vallabhbhai National Institute of Technology, Surat (SVNIT, Surat) B.Tech students to carry out part of their studies including project work at DA-IICT, Gandhinagar and offer an opportunity for direct admission to PhD without the need to qualify GATE or any other national level examination. This will enable **"early admission" to PhD for SVNIT, Surat** B.Tech students as early as at the end of their 6th semester. It is envisaged that this scheme will also help SVNIT, Surat students to enhance their chances for qualifying for the PMRF fellowship for PhD at DA-IICT, Gandhinagar.

4.1. Under this scheme, SVNIT, Surat students who have a CGPA of 7.5 at the end of their sixth semester (three years), will be eligible to apply for a project in summer and complete their fourth year (7th and 8th semesters), at DA-IICT, Gandhinagar, and then be considered for an early admission into the PhD program at DA-IICT, Gandhinagar, subject to maintaining an overall CGPA of 7.5 in UG degree.

4.2. All applications will be received through a portal set up for this purpose. They will submit their transcript, and other academic records and achievements, and documentary evidence of any research or internship experience.

4.3. Upon selection, through a selection committee set up for the purpose, the students will have an offer of admission to the PhD program. The students are expected to demonstrate sufficient merit in course work, project work and/or research during their 7th and 8th semesters of B.Tech to continue, to join the PhD program. If the performance of the students is not up to the mark as per the guidelines of DA-IICT, Gandhinagar, the students will be sent back to SVNIT, Surat with the credits earned.

4.4. Students will actually join the PhD program only after completion of all graduation requirements at SVNIT, Surat which would be typically in the month of July. All shortlisting criteria and admission criteria must be satisfied by the student at the time of joining as well. Requirement of GATE is waived off, since the student will enter DA-IICT, Gandhinagar with a minimum CGPA of 7.5.

4.5. During the stay in DA-IICT, Gandhinagar, the student will have the status of Visiting Student, and will enjoy all the privileges of a full-time student in DA-IICT, Gandhinagar.

4.6. During the stay in DA-IICT, Gandhinagar, the student may take courses to satisfy the credit requirements for their B.Tech registration in their parent institution (SVNIT, Surat). DA-IICT, Gandhinagar will certify the completion of the courses and the grades obtained in them including project work done at DA-IICT, Gandhinagar

4.7. In all academic/project work undertaken in DA-IICT, Gandhinagar, transcript will be provided with relevant credits, however, consideration of these credits and mapping to the letter grades will be up to SVNIT, Surat as per their grading system. Students may also undertake additional credits as Pre-Ph.D. courses for their PhD program, during their stay (in a regular semester) at DA-IICT, Gandhinagar.

4.8. During their stay in DA-IICT, Gandhinagar as a Visiting Student, DA-IICT, Gandhinagar will not be charging any academic fees to the student, except fixed charges as applicable, since these students will be paying their regular academic fees in their parent institution. Being B.Tech degree students, DA-IICT, Gandhinagar will be providing either on-campus or off-campus hostel accommodation during the one-year period. Hostel fees will be charged at regular rates.

4.9. Students coming under this program will not be entitled for participation in the Training & Placement process in DA-IICT, Gandhinagar or SVNIT, Surat, once they register as full-time PhD students. This will be clearly stated in their offer of admission.

5. Commencement, renewal, termination and amendment

This MoU will come into force upon affixing of the signatures of the representatives of the partner institutions and will remain in effect for five (5) years. This MoU may be renewed upon its expiry, with the agreement of both the partner institutions. If either partner institution wishes to terminate the MoU at the end of five years, it must notify the other institution not less than six months prior to the expiry of the MoU.

This MoU or its renewal and the actions taken under it may he reviewed at any time. Modifications may be made by mutual agreement and any amendment or extension to the agreement may be formalized by the exchange of letters between the two parties.

Signed by

K.S. DasGupta.

Director
DA-IICT, Gandhinagar
Gujrat

Date: 9/05/23

Signed by

Director
SVNIT, Surat
Gujrat

Date: 9.5.2023.

Witness:

Annexure 3
of the 58th Meeting of the Senate

Sr No	MOU Signed With	Nature of MoU	Type of MoU	Objective/Purpose of MOU	Status	Date of Signing of MOU	Date of Expiry of MOU
1	CHUNG-ANG UNIVERSITY, REPUBLIC OF KOREA	Academic	International	WORK FOR INTERNATIONALIZATION HIGHER EDUCATION	Active	04-03-2019	04-03-2024
2	THE UNIVERSITY OF NEW BRUNSWICK, CANADA	Academic	International	EXCHANGE OF SCHOLARS, RESEARCHERS & STUDENTS FOR RESEARCH, CO AUTHORING OF SCHOLARLY AND RESEARCH PUBLICATIONS, EXCHANGE OF SCHOLARS, RESEARCHERS AND STUDENTS FOR SEMINARS, CONFERENCES, WORKSHOPS AND OTHER ACADEMIC INTERACTION MEETINGS	Active	14-10-2021	13-10-2026
3	SAINT PETERSBURG STATE INSTITUTE OF TECHNOLOGY (SPSIT), RUSSIA	Academic	International	EXCHANGE OF SCHOLARS, RESEARCHERS & STUDENTS FOR RESEARCH, CO AUTHORING OF SCHOLARLY AND RESEARCH PUBLICATIONS, EXCHANGE OF SCHOLARS, RESEARCHERS AND STUDENTS FOR SEMINARS, CONFERENCES, WORKSHOPS AND OTHER ACADEMIC INTERACTION MEETINGS	Active	11-12-2021	10-12-2023
4	NORWEGIAN UNIVERSITY OF SCIENCE AND TECHNOLOGY, NORWAY	Academic	International	EXCHANGE OF SCHOLARS, RESEARCHERS & STUDENTS FOR RESEARCH, CO AUTHORING OF SCHOLARLY AND RESEARCH PUBLICATIONS, EXCHANGE OF SCHOLARS, RESEARCHERS AND STUDENTS FOR SEMINARS, CONFERENCES, WORKSHOPS AND OTHER ACADEMIC INTERACTION MEETINGS	Active	07-04-2022	06-04-2027
5	UTICA UNIVERSITY, NEW YORK, USA	Academic	International	EXCHANGE OF SCHOLARS, RESEARCHERS & STUDENTS FOR RESEARCH, CO AUTHORING OF SCHOLARLY AND RESEARCH PUBLICATIONS, EXCHANGE OF SCHOLARS, RESEARCHERS AND STUDENTS FOR SEMINARS, CONFERENCES, WORKSHOPS AND OTHER ACADEMIC INTERACTION MEETINGS	Active	01-10-2022	30-09-2024
6	SOUTHERN METHODIST UNIVERSITY (SMU), TX, USA	Academic	International	EXCHANGE OF SCHOLARS, RESEARCHERS & STUDENTS FOR RESEARCH, CO AUTHORING OF SCHOLARLY AND RESEARCH PUBLICATIONS, EXCHANGE OF SCHOLARS, RESEARCHERS AND STUDENTS FOR SEMINARS, CONFERENCES, WORKSHOPS AND OTHER ACADEMIC INTERACTION MEETINGS	Active	02.12.2022	01.12.2024
7	UNIVERSITY OF LOUISVILLE, KENTUCKY, USA	Academic	International	EXCHANGE OF SCHOLARS, RESEARCHERS & STUDENTS FOR RESEARCH, CO AUTHORING OF SCHOLARLY AND RESEARCH PUBLICATIONS, EXCHANGE OF SCHOLARS, RESEARCHERS AND STUDENTS FOR SEMINARS, CONFERENCES, WORKSHOPS AND OTHER ACADEMIC INTERACTION MEETINGS	Active	17.01.2023	16.01.2025
8	AUSTRALIA INDIA WATER CENTRE	Research Lab	International	TO ESTABLISH AN UNDERSTANDING OF MUTUAL CO-OPERATION FOR THE AUSTRALIA INDIA WATER CENTRE (AIWC) BETWEEN PARTIES. THE AIWC WILL ENABLE AUSTRALIAN INDIAN PARTNER TO EXPLORE OPPORTUNITIES AND CREATE SYNERGY FOR A LONGER TERM COLLABORATION IN RESEARCH AND EDUCATION BETWEEN THE TWO COUNTIES.	Active	02-11-2020	01-11-2025
9	INDIAN INSTITUTE OF TECHNOLOGY, JAMMU	Academic	National	ACADEMIC & RESEARCH COLLABORATION IN THE AREA OF MUTUAL INTEREST. EXCHANGE OF ACADEMIC INFORMATION, SCHOLARLY INFORMATION, MATERIALS AND PUBLICATIONS. EXCHANGE OF STUDENTS AND FACULTY. SPONSORSHIP OF COOPERATIVE SEMINARS, WORKSHOPS AND OTHER ACADEMIC MEETINGS	Active	31-05-2019	30-05-2024
10	SARVAJANIK COLLEGE OF ENGINEERING & TECHNOLOGY, SURAT	Academic	National	TO ENHANCE WITHIN THE COUNTRY THE AVAILABILITY OF HIGHLY QUALIFIED MANPOWER IN THE AREAS OF ENGINEERING	Active	09-03-2021	08-03-2026
11	NATIONAL INSTITUTE OF TECHNOLOGY, MANIPUR	Academic	National	TO PROMOTE INTERESTS IN RESEARCH, TEACHING, TRAINING & CONSULTANCY RELATED ACTIVITIES AND TO DEEPEN THE UNDERSTANDING OF THE SCIENTIFIC, TECHNOLOGICAL AND MANAGEMENT ISSUES RELEVANT TO THE RESPECTIVE INSTITUTES.	Active	10-08-2021	09-08-2026
12	IHUB NTIHAC FOUNDATION, IIT KANPUR	Academic	National	TO COOPERATE IN CYBER SECURITY AND RESEARCH. TO DEVELOP & FOSTER AN ENVIRONMENT TO DEAL WITH THE CURRENT AND FUTURE CYBER SECURITY CHALLENGES IN DIFFERENT SECTORS.	Active	02-11-2021	01-11-2024
13	Dr. S & S S GHANDHY GOVERNMENT ENGINEERING COLLEGE, SURAT	Academic	National	VISIT & EXCHANGE OF FACULTY MEMBERS AND SCHOLARS, EXCHANGE OF INFORMATION INCLUDING RESEARCH PUBLICATIONS OF FACULTY MEMBERS, JOINT RESEARCH ACTIVITIES AND JOIN SUPERVISION OF RESEARCH WORK , JOINT CONFERENCES OR SYMPOSIA ON SUBJECTS OF MUTUAL INTEREST.	Active	12-11-2021	12-11-2023
14	BIRLA VISHVAKARMA MAHAVIDYALAYA, VALLABH VIDYANAGAR	Academic	National	ENCOURAGE DIRECT CONTACT AND CO-OPERATION BETWEEN THE FACULTY AND ADMINISTRATIVE STAFF, DEPARTMENTS AND RESEARCH INSTITUTIONS. EXCHANGE OF FACULTY MEMBERS, RESEARCH SCHOLARS, INFORMATION, JOINT RESEARCH ACTIVITIES, JOINT CONFERENCES OR SYMPOSIA ON SUBJECTS OF MUTUAL INTEREST	Active	06-12-2021	05-12-2023

Sr No	MOU Signed With	Nature of MoU	Type of MoU	Objective/Purpose of MOU	Status	Date of Signing of MOU	Date of Expiry of MOU
15	RASHTRIYA RAKSHA UNIVERSITY, GANDHINAGAR	Academic	National	ENCOURAGE DIRECT CONTACT AND CO-OPERATION BETWEEN THE FACULTY AND ADMINISTRATIVE STAFF, DEPARTMENTS AND RESEARCH INSTITUTIONS; EXCHANGE OF FACULTY MEMBERS, RESEARCH SCHOLARS, INFORMATION, JOINT RESEARCH ACTIVITIES, JOINT CONFERENCES OR SYMPOSIA ON SUBJECTS OF MUTUAL INTEREST	Active	02-12-2021	01-12-2023
16	NATIONAL FORENSIC SCIENCES UNIVERSITY, GANDHINAGAR	Academic	National	EXCHANGE OF SCHOLARS, RESEARCHERS & STUDENTS FOR RESEARCH, CO AUTHORING OF SCHOLARLY AND RESEARCH PUBLICATIONS, EXCHANGE OF SCHOLARS, RESEARCHERS AND STUDENTS FOR SEMINARS, CONFERENCES, WORKSHOPS AND OTHER ACADEMIC INTERACTION MEETINGS	Active	01-01-2022	31-12-2023
17	C-DAC, TRIVANDRUM	Academic	National	JOINT COLLABORATION IN AREAS OF DIGITAL FORENSICS	Active	10-01-2022	10-01-2024
18	PANDIT DEENDAYAL ENERGY UNIVERSITY, GANDHINAGAR	Academic	National	EXCHANGE OF SCHOLARS, RESEARCHERS & STUDENTS FOR RESEARCH, CO AUTHORING OF SCHOLARLY AND RESEARCH PUBLICATIONS, EXCHANGE OF SCHOLARS, RESEARCHERS AND STUDENTS FOR SEMINARS, CONFERENCES, WORKSHOPS AND OTHER ACADEMIC INTERACTION MEETINGS	Active	06-02-2022	05-02-2027
19	VISHWAKARMA GOVERNMENT ENGINEERING COLLEGE, CHANDKHEDA, AHMEDABAD	Academic	National	EXCHANGE OF SCHOLARS, RESEARCHERS & STUDENTS FOR RESEARCH, CO AUTHORING OF SCHOLARLY AND RESEARCH PUBLICATIONS, EXCHANGE OF SCHOLARS, RESEARCHERS AND STUDENTS FOR SEMINARS, CONFERENCES, WORKSHOPS AND OTHER ACADEMIC INTERACTION MEETINGS	Active	08-02-2022	07-02-2024
20	L D COLLEGE OF ENGINEERING, AHMEDABAD	Academic	National	EXCHANGE OF SCHOLARS, RESEARCHERS & STUDENTS FOR RESEARCH, CO AUTHORING OF SCHOLARLY AND RESEARCH PUBLICATIONS, EXCHANGE OF SCHOLARS, RESEARCHERS AND STUDENTS FOR SEMINARS, CONFERENCES, WORKSHOPS AND OTHER ACADEMIC INTERACTION MEETINGS	Active	01-04-2022	31-03-2025
21	IIT GANDHINAGAR, IIIT BANGLORE, IIT GOA, NIT PUDUCHERRY	Academic	National	EXCHANGE OF SCHOLARS, RESEARCHERS & STUDENTS FOR RESEARCH, CO AUTHORING OF SCHOLARLY AND RESEARCH PUBLICATIONS, EXCHANGE OF SCHOLARS, RESEARCHERS AND STUDENTS FOR SEMINARS, CONFERENCES, WORKSHOPS AND OTHER ACADEMIC INTERACTION MEETINGS	Active	01-03-2022	28-02-2024
22	MNIT JAIPUR, LNMIT JAIPUR, IIT DELHI, NIT ROURKELA)	Academic	National	EXCHANGE OF SCHOLARS, RESEARCHERS & STUDENTS FOR RESEARCH, CO AUTHORING OF SCHOLARLY AND RESEARCH PUBLICATIONS, EXCHANGE OF SCHOLARS, RESEARCHERS AND STUDENTS FOR SEMINARS, CONFERENCES, WORKSHOPS AND OTHER ACADEMIC INTERACTION MEETINGS	Active	01-03-2022	28-02-2024
23	IHUB DIVYASAMPARK, IIT, ROORKEE	Academic	National	TO FORMALIZE AN INTENT TO COLLABORATE ON EVENTS AND NETWORK FACILITATION TO EXPLORE OPPORTUNITIES FOR CYBER PHYSICAL SYSTEMS (CPS) RELATED TO INNOVATION AND PARTNERSHIPS BETWEEN SVNIT, SURAT AND iHUB DIVYASAMPARK	Active	10-02-2022	09-02-2025
24	VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT	Academic	National	EXCHANGE OF SCHOLARS, RESEARCHERS & STUDENTS FOR RESEARCH, CO AUTHORING OF SCHOLARLY AND RESEARCH PUBLICATIONS, EXCHANGE OF SCHOLARS, RESEARCHERS AND STUDENTS FOR SEMINARS, CONFERENCES, WORKSHOPS AND OTHER ACADEMIC INTERACTION MEETINGS	Active	20-05-2022	19-05-2024
25	MARWADI UNIVERSITY, RAJKOT	Academic	National	EXCHANGE OF SCHOLARS, RESEARCHERS & STUDENTS FOR RESEARCH, CO AUTHORING OF SCHOLARLY AND RESEARCH PUBLICATIONS, EXCHANGE OF SCHOLARS, RESEARCHERS AND STUDENTS FOR SEMINARS, CONFERENCES, WORKSHOPS AND OTHER ACADEMIC INTERACTION MEETINGS	Active	12-05-2022	11-05-2024
26	NATIONAL INSTITUTE OF TECHNOLOGY, SRINAGAR	Academic	National	EXCHANGE OF SCHOLARS, RESEARCHERS & STUDENTS FOR RESEARCH, CO AUTHORING OF SCHOLARLY AND RESEARCH PUBLICATIONS, EXCHANGE OF SCHOLARS, RESEARCHERS AND STUDENTS FOR SEMINARS, CONFERENCES, WORKSHOPS AND OTHER ACADEMIC INTERACTION MEETINGS	Active	10-06-2022	09-06-2024
27	INDIAN INSTITUTE OF INFORMATION TECHNOLOGY DESIGN & MANUFACTURING (IIITDM), KURNOOL	Academic	National	TO LEVERAGE COLLABORATIVE ACTIVITIES IN HUMAN RESOURCE DEVELOPMENT THROUGH CAPACITY BUILDING IN EDUCATION AND TRAINING IN THE AREA OF UNMANNED AIRCRAFT SYSTEM (UAS)	Active	01-10-2022	30-09-2027

Sr.No	MOU Signed With	Nature of MoU	Type of MoU	Objective/Purpose of MOU	Status	Date of Signing of MOU	Date of Expiry of MOU
28	INDIAN INSTITUTE OF INFORMATION TECHNOLOGY, NAGPUR	Academic	National	EXCHANGE OF SCHOLARS, RESEARCHERS & STUDENTS FOR RESEARCH, CO AUTHORING OF SCHOLARLY AND RESEARCH PUBLICATIONS, EXCHANGE OF SCHOLARS, RESEARCHERS AND STUDENTS FOR SEMINARS, CONFERENCES, WORKSHOPS AND OTHER ACADEMIC INTERACTION MEETINGS	Active	30-11-2022	29-11-2024
29	NATIONAL INSTITUTE OF TECHNICAL TEACHERS' TRAINING AND RESEARCH, BHOPAL	Academic	National	EXCHANGE OF SCHOLARS, RESEARCHERS & STUDENTS FOR RESEARCH, CO AUTHORING OF SCHOLARLY AND RESEARCH PUBLICATIONS, EXCHANGE OF SCHOLARS, RESEARCHERS AND STUDENTS FOR SEMINARS, CONFERENCES, WORKSHOPS AND OTHER ACADEMIC INTERACTION MEETINGS	Active	06-12-2022	05-12-2024
30	NEHRU FOUNDATION FOR DEVELOPMENT CENTRE FOR ENVIRONMENT EDUCATION SOCIETY, AHMEDABAD	Academic	National	EXCHANGE OF SCHOLARS, RESEARCHERS & STUDENTS FOR RESEARCH, CO AUTHORING OF SCHOLARLY AND RESEARCH PUBLICATIONS, EXCHANGE OF SCHOLARS, RESEARCHERS AND STUDENTS FOR SEMINARS, CONFERENCES, WORKSHOPS AND OTHER ACADEMIC INTERACTION MEETINGS	Active	21-12-2022	20-12-2027
31	INDIAN INSTITUTE OF INFORMATION TECHNOLOGY, PUNE	Academic	National	EXCHANGE OF SCHOLARS, RESEARCHERS & STUDENTS FOR RESEARCH, CO AUTHORING OF SCHOLARLY AND RESEARCH PUBLICATIONS, EXCHANGE OF SCHOLARS, RESEARCHERS AND STUDENTS FOR SEMINARS, CONFERENCES, WORKSHOPS AND OTHER ACADEMIC INTERACTION MEETINGS	Active	11-11-2022	10-11-2024
32	INDIAN INSTITUTE OF TECHNOLOGY, MANDI	Academic	National	ACADEMIC & RESEARCH COLLABORATION IN THE AREA OF MUTUAL INTEREST. EXCHANGE OF ACADEMIC INFORMATION, SCHOLARLY INFORMATION, MATERIALS AND PUBLICATIONS. EXCHANGE OF STUDENTS AND FACULTY. SPONSORSHIP OF COOPERATIVE SEMINARS, WORKSHOPS, DIRECT PH.D. ADMISSION	Active	30-01-2023	29-01-2028
33	MALAVIYA NATIONAL INSTITUTE OF TECHNOLOGY, JAIPUR	Academic	National	ACADEMIC & RESEARCH COLLABORATION IN THE AREA OF MUTUAL INTEREST. EXCHANGE OF ACADEMIC INFORMATION, SCHOLARLY INFORMATION, MATERIALS AND PUBLICATIONS. EXCHANGE OF STUDENTS AND FACULTY. SPONSORSHIP OF COOPERATIVE SEMINARS, WORKSHOPS, DIRECT PH.D. ADMISSION	Active	01-02-2023	01-02-2025
34	NAVSARI AGRICULTURE UNIVERSITY, NAVSARI	Academic	National	EXCHANGE OF SCHOLARS, RESEARCHERS & STUDENTS FOR RESEARCH, CO AUTHORING OF SCHOLARLY AND RESEARCH PUBLICATIONS, EXCHANGE OF SCHOLARS, RESEARCHERS AND STUDENTS FOR SEMINARS, CONFERENCES, WORKSHOPS AND OTHER ACADEMIC INTERACTION MEETINGS	Active	06.02.2023	05.02.2028
35	INDIRA GANDHI DELHI TECHNICAL UNIVERSITY FOR WOMEN, DELHI	Academic	National	TO BUILD LONG TERM RELATIONSHIP AND TO DEVELOP HEALTHY AND STABLE ARRANGEMENTS BETWEEN BOTH THE PARTIES.	Active	10.03.2023	09.03.2028
36	NATIONAL INSTITUTE OF TECHNOLOGY, GOA	Academic	National	JOINT RESEARCH ACTIVITIES AND JOINT SUPERVISION OF RESEARCH WORK.	Active	10.04.2023	10.04.2025
37	NATIONAL INSTITUTE OF PHARMACEUTICAL EDUCATION AND RESEARCH, HYDERABAD	Academic	National	EXCHANGE OF SCHOLARS, RESEARCHERS & STUDENTS FOR RESEARCH, CO AUTHORING OF SCHOLARLY AND RESEARCH PUBLICATIONS, EXCHANGE OF SCHOLARS, RESEARCHERS AND STUDENTS FOR SEMINARS, CONFERENCES, WORKSHOPS AND OTHER ACADEMIC INTERACTION MEETINGS	Active	26.03.2023	25.03.2025
38	INSTITUTE OF TECHNOLOGY, NIRMA UNIVERSITY, AHMEDABAD	Academic	National	EXCHANGE OF SCHOLARS, RESEARCHERS & STUDENTS FOR RESEARCH, CO AUTHORING OF SCHOLARLY AND RESEARCH PUBLICATIONS, EXCHANGE OF SCHOLARS, RESEARCHERS AND STUDENTS FOR SEMINARS, CONFERENCES, WORKSHOPS AND OTHER ACADEMIC INTERACTION MEETINGS	Active	21.03.2023	20.03.2025
39	THDC - INSTITUTE OF HYDROPOWER ENGINEERING & TECHNOLOGY, TEHRI - UTTARAKHAND	Academic	National	EXCHANGE OF SCHOLARS, RESEARCHERS & STUDENTS FOR RESEARCH, CO AUTHORING OF SCHOLARLY AND RESEARCH PUBLICATIONS, EXCHANGE OF SCHOLARS, RESEARCHERS AND STUDENTS FOR SEMINARS, CONFERENCES, WORKSHOPS AND OTHER ACADEMIC INTERACTION MEETINGS	Active	15.03.2023	15.03.2026
40	NATIONAL INSTITUTE OF TECHNOLOGY, SIKKIM	Academic	National	EXCHANGE OF SCHOLARS, RESEARCHERS & STUDENTS FOR RESEARCH, CO AUTHORING OF SCHOLARLY AND RESEARCH PUBLICATIONS, EXCHANGE OF SCHOLARS, RESEARCHERS AND STUDENTS FOR SEMINARS, CONFERENCES, WORKSHOPS AND OTHER ACADEMIC INTERACTION MEETINGS	Active	20.03.2023	20.03.2025

Sr No	MOU Signed With	Nature of MoU	Type of MoU	Objective/Purpose of MOU	Status	Date of Signing of MOU	Date of Expiry of MOU
41	DHIRUBHAI AMBANI INSTITUTE OF INFORMATION AND COMMUNICATION TECHNOLOGY, GANDHINAGAR	Academic	National	EXCHANGE OF SCHOLARS, RESEARCHERS & STUDENTS FOR RESEARCH, CO AUTHORING OF SCHOLARLY AND RESEARCH PUBLICATIONS, EXCHANGE OF SCHOLARS, RESEARCHERS AND STUDENTS FOR SEMINARS, CONFERENCES, WORKSHOPS AND OTHER ACADEMIC INTERACTION MEETINGS	Active	09.05.2023	08.05.2028
42	INDIAN INSTITUTE OF TECHNOLOGY, GANDHINAGAR	Academic	National	EXCHANGE OF SCHOLARS, RESEARCHERS & STUDENTS FOR RESEARCH, CO AUTHORING OF SCHOLARLY AND RESEARCH PUBLICATIONS, EXCHANGE OF SCHOLARS, RESEARCHERS AND STUDENTS FOR SEMINARS, CONFERENCES, WORKSHOPS AND OTHER ACADEMIC INTERACTION MEETINGS	Active	09.05.2023	08.05.2026
43	ELENA GEO-SYSTEMS PVT LTD, BANGLORE-560032	Industry	National	RECOGNIZING THE IMPORTANCE OF RESEARCH AND DEVLEOPMENT IN THE AREAS OF NAVIC BASED MONITORING, AS WELL AS IMPARTING INDUSTRIAL TRAINING TO THE ENGINEERING/TECHNOLOGY/SCIENCES STUDENTS, ETC	Active	28-10-2020	28-10-2025
44	NATIONAL HIGHWAYS AUTHORITY OF INDIA (NHAI)	Industry	National	TO WORK TOGETHER WITH MUTUAL CO-OPERATION FOR DISSEMINATION OF RESPECTIVE EXPERTISE IN CIVIL/HIGHWAY ENGINEERING FILED THROUGH THE ROAD INFRASTRUCTURE DEVELOPMENT	Active	17-03-2021	17-03-2026
45	POLLUCON LABORATORIES PVT LTD, SURAT	Industry	National	SHARING OF EQUIPMENTS/FACILITY AND MANPOWER, ANALYSIS AND COLLECTION OF SAMPLES, AUDITY WORK, 50% FEE FOR CONSULTATION, JOINT INSPECTION, AUDIT WORK.	Active	31-05-2021	30-05-2023
46	SOUTHERN GUJARAT CHAMBER OF COMMERCE AND INDUSTRIES, SURAT-395001	Industry	National	TO ENCOURAGE INTERACTION BETWEEN THE ENGINEERS, SCIENTISTS, RESEARCH FELLOWS, FACULTY MEMBERS, START UPS, START UP ENTHUSIASTS AND STUDENTS OF BOTH ORGANIZATIONS	Active	26-06-2021	25-06-2024
47	FAMS DESIGN SOLUTIONS PVT LTD, MUMBAI	Industry	National	JOINT RESEARCH, CONSULTANCY ACTIVITIES AND JOINT SUPERVISION OF RESEARCH WORK. JOINT CONFERENCES OR SYMPOSIA ON SUBJECTS OF MUTUAL INTEREST.	Active	29-10-2021	28-10-2026
48	LARSON & TOUBRO, CTCW, HAZIRA, SURAT	Industry	National	TO PROVIDE THE INFRACTURAL SUPPORT (CLASS ROOM/WORKSHOP FOR PRACTICAL TRAINING/LIBRARY/LUNCH-BREAKFAST) TO THE STUDENTS, FACULTY & STAFFS, EMPLOYEES, TO PROVIDE COURSE OUTLINE FOR CONDUCTING THE TRAINING PROGRAM.	Active	01-12-2021	30-11-2024
49	DISTRICT RURAL DEVELOPMENT AGENCY, SURAT (SWATCHH BHARAT MISSION, PHASE-2, GOVERNMENT OF GUJARAT)	Industry	National	STRATEGIC PARTNERSHIP IN THE AREA OF KNOWLEDGE SHARING IN SOLID WASTE MANAGEMENT FOR SCIENTIFIC TREATMENT AND DISPOSAL OF WASTE PLASTICS IN THE GRAM PANCHAYAT OF MORA, BHATLAI, RAJAGRAI, SUNVALI & JUNAGAM, TA. CHORYASI, DIST. SURAT.	Active	25-11-2021	24-11-2026
50	TATA CONSULTANCY SERVICES, MUMBAI	Industry	National	EXCHANGE OF SCHOLARS, RESEARCHERS & STUDENTS FOR RESEARCH, CO AUTHORING OF SCHOLARLY AND RESEARCH PUBLICATIONS, FXCHANGE OF SCHOLARS, RESEARCHERS AND STUDENTS FOR SEMINARS, CONFERENCES, WORKSHOPS AND OTHER ACADEMIC INTERACTION MEETINGS	Active	21-12-2021	20-12-2023
51	M G MOTOR INDIA PRIVATE LIMITED	Industry	National	DONATION OF NON-ROADWORTHY VEHICLE FOR SOLELY TO BE USED FOR EDUCATION AND TRAINING AND OTHER ACADEMIC PURPOSES.	Active	13-04-2022	12-04-2029
52	BENCHMARK AGENCIES PVT LTD, AHMEDABAD	Industry	National	EXCHANGE OF SCHOLARS, RESEARCHERS & STUDENTS FOR RESEARCH, CO AUTHORING OF SCHOLARLY AND RESEARCH PUBLICATIONS, EXCHANGE OF SCHOLARS, RESEARCHERS AND STUDENTS FOR SEMINARS, CONFERENCES, WORKSHOPS AND OTHER ACADEMIC INTERACTION MEETINGS	Active	11-04-2022	10-04-2027
53	SAHAJANAND MEDICAL TECHNOLOGIES PRIVATE LTD. VED ROAD, SURAT	Industry	National	RAPIDLY GROWING SCIENTIFIC AND TECHNOLOGICAL KNOWLEDGE AND PROFESSIONAL EXCELLENCE IN SCIENCE & TECHNOLOGY BY UNDERTAKING INDUSTRIAL & APPLIED RESEARCH AND CONSULTANCY	Active	01-05-2022	30-04-2027
54	TWEEN ENGINEERS, VADODARA	Industry	National	JOINT RESEARCH ACTIVITIES AND JOINT SUPERVISION OF RESEARCH WORK.	Active	21.03.2023	20.03.2025
55	ADANI HAZIRA PORTS LTD	Industry	National	JOINT RESEARCH ACTIVITIES AND JOINT SUPERVISION OF RESEARCH WORK.	Active	01.01.2023	31.12.2024
56	RESEARCH FOR RESURGENCE FOUNDATION, NAGPUR	Research Lab	National	TO WORK TOGETHER FOR MUTUAL COLLABORATION TO STRENGTHEN IN RESEARCH AND FACILITIES	Active	20-01-2021	20-01-2026
57	GUJRAT COUNCIL ON SCIENCE AND TECHNOLOGY, GANDHINAGAR	Research Lab	National	TO CARRY OUT RESEARCH WORK ON "GRAPHENE-BASED NANOMATERIALS IN PROPERTY ENHANCEMENT OF CEMENT COMPOSITES AND CONCRETE"	Active	30-03-2021	29-03-2024
58	CSIR- CENTRAL ROAD RESEARCH INSTITUTE, NEW DELHI	Research Lab	National	COLLABORATIVE ON RESEARCH AND ALLIED ACADEMIC ACTIVITIES	Active	07-04-2022	06-04-2025

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59	CSIR- CENTRAL BUILDING RESEARCH INSTITUTE, ROORKEE	Research Lab	National	TO PROMOTE AND RECOGNIZE THE IMPORTANCE OF RESEARCH AND DEVELOPMENT IN THE AREAS OF STRUCTURAL ENGINEERING, STRUCTURAL HEALTH MONITORING, FIRE ENGINEERING, HERITAGE STRUCTURES, INNOVATIVE BUILDING MATERIALS, ADVANCE STRUCTURAL COMPOSITE & DURABILITY, ENGINEERING AND SCIENCES	Active	26-08-2022	25-08-2027
60	RESEARCH IN ENVIRONMENT, EDUCATION AND DEVELOPMENT SOCIETY (REEDS), BHARAT	Research Lab	National	DEVELOPMENT AND SUBMISSION OF COLLABORATIVE RESEARCH, S&T PROPOSALS TO VARIOUS AGENCIES REGARDING SCIENCE AND TECHNOLOGICAL SOLUTIONS	Active	10-02-2023	09-02-2025
61	KSCSTE - NATIONAL TRANSPORTATION PLANNING AND RESEARCH CENTRE, THIRUVANTHPURAM	Research Lab	National	STRENGTHENING AND GROWTH OF MUTUALLY BENEFICIAL RESEARCH, EDUCATIONAL AND OUTREACH PROGRAMMES TO BE CONDUCTED COOPERATIVELY	Active	24.01.2023	23.01.2025

Sardar Vallabhbhai National Institute of Technology (SVNIT) Surat
Department of Humanities and Social Sciences

Annexure 4
Of the 58th Meeting of the Senate

B.Tech.1 /M.Sc. 1 Semester I/ II INDIAN VALUE SYSTEM AND SOCIAL CONSCIOUSNESS HS120	Scheme	L	T	P	Credit
		2	0	0	02

1.	Course Outcomes (COs): At the end of the course, the students will be able to
CO1	interpret the important values that need to be cultivated
CO2	analyse the cultures depicted in Ramayana, Mahabharata, Jainism and Buddhism
CO3	review the structure of Indian knowledge system
CO4	discuss the significance of constitution of India
CO5	demonstrate social responsibility

2.	Syllabus	
	HUMAN VALUES AND CONSCIOUSNESS	**(08 Hours)**
	Human Values Definition and Classification of Values; The Problem of Hierarchy of Values and their Choice; Self-Exploration; 'Basic Human Aspirations; Right understanding, Relationship and Physical Facility; fulfilment of aspirations; Understanding Happiness and Prosperity, Harmony at various levels. What Is Consciousness? ; Can We Build A Conscious Machine?; Levels Of Consciousness; Mind, Matter And Beyond; Holistic Lifestyle; Dealing With Anxiety; Connecting Mind To Brain; Minds, Brains, And Programs.	
	INDIAN CULTURE AND HERITAGE	**(07 Hours)**
	Culture and its salient features: The Vedic – Upanishadic Culture and society, Human aspirations in those societies; Culture in Ramayana and Mahabharata: The Ideal Man and Woman, Concepts Maitri, Karuna, Seela, Vinaya, Kshama, Santi, Anuraga – as exemplified in the stories and anecdotes of the Epics; The Culture of Jainism: Jaina conception of Soul, Karma and liberation, Buddhism as a Humanistic culture; The four Noble truths of Buddhism; Vedanta and Indian Culture;	
	INDIAN KNOWLEDGE SYSTEM	**(08 Hours)**
	Indian knowledge as a unique system, Place of Indian knowledge in mankind's evolution, Relevance of Indian knowledge to present day and future of mankind, Nature of Indian Knowledge; Structure of Indian Knowledge: Types of knowledge (para, apara), The scientific and the unscientific, Instruments for gaining and verifying knowledge, Knowledge traditions: Lineages, Instruments - debate, epistemology and pedagogy, The inverted tree – axiomatic, deductive, empirical knowledge, and evolution of knowledge; Disciplines of Study: A brief outline of the subjects, the major contributions and theories along with timelines where relevant: Mathematics; Astronomy; Physical Sciences; Cosmogony; Language studies; Astrology; Moral studies/righteousness; Statecraft and political philosophy	

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	INDIAN CONSTITUTION	**(04 hours)**
	History of Making of the Indian Constitution; Philosophy of the Indian Constitution: Preamble; Salient Features; Contours of Constitutional Rights & Duties; Organs of Governance: Parliament; Composition; Qualifications and Disqualifications; Powers and Functions	
	SOCIAL RESPONSIBILITY	**(03 Hours)**
	Social Responsibility: Meaning and Importance, Different Approaches of Social Responsibility. Social Responsibility of Business towards different Stakeholders. Evolution and Legislation of CSR in India.	
		(Total Contact Time: 30 Hours)

3.	**Books Recommended**
1	D. K. Chaturvedi, Professional Ethics Values and Consciousness, Ane Books Pvt. Ltd., 2023.
2	R.R. Gaur, R Sangal, G. P. Bagaria, Human Values and Professional Ethics, Excel Books, New Delhi, 2010.
3	A.N. Tripathi, Human Values, New Age Intl. Publishers, New Delhi, 2004.
4	P R Rao, Indian Heritage and Culture, Sterling Publishers Pvt. Ltd, 1988.
5	D. Singh, Indian Heritage and Culture, APH Publishing Corporation, 1998.
6	Sri Prashant Pole, Treasure Trove of Indian knowledge, Prabhat Prakashan, 2021.
7	Sri Suresh Soni, Sources of our cultural heritage, Prabhat Prakashan, 2018.
8	D.D. Basu, Introduction to the Constitution of India, Lexis Nexis, 2015.