

Departmental Elective – III

Fifth year of Five Years integrated M.Sc (Physics)  
M.Sc. – V, Semester – IX

	L	T	P	C
<b>MP 573 : GPS Fundamentals and Applications</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>3</b>
<ul style="list-style-type: none"> <li>• <b>INTRODUCTION AND OVERVIEW</b> (02 Hours)</li> <li>• <b>FUNDAMENTALS OF NAVIGATION SYSTEM</b> (10 Hours) Concept of Ranging using Time of Arrival, Reference coordinate system, fundamentals of satellite orbits, positioning</li> <li>• <b>DIFFERENT SATELLITE NAVIGATIONAL SYSTEMS</b> (04 Hours) GNSS, Galileo, etc.</li> <li>• <b>GPS SYSTEM SEGMENTS</b> (06Hours) Overview of the GPS system, Control Segment, Space segment, User segment</li> <li>• <b>GPS SATELLITE SIGNAL CHARACTERISTICS</b> (06 Hours) GPS frequency and modulation, tracking loops, filters, formation of pseudorange, signal acquisition, processing</li> <li>• <b>GPS RECEIVING SYSTEMS</b> (08 Hours) Single frequency receivers, Dual frequency receivers, position accuracy, dilution of precision, New frequencies added</li> <li>• <b>APPLICATIONS OF GPS</b> (06 Hours) GPS in surveying, location based services, aircraft landing, others</li> </ul>				
<b>(Total Contact Time (Theory) : 42 Hours)</b>				

**BOOKS RECOMMENDED :**

1. Kaplan E.D. (ed)	<i>Understanding GPS: Principles and applications</i>	Artech House	1996
2. Rabbany Ahmed	<i>Introduction to GPS: The Global Positioning System</i>	Artech House	2006
3. Guochang Xu	<i>GPS: Theory, Algorithms and Applications</i>	Springer	2007
4. Bradford W. Parkiwson (Ed.), James J. Jr. Spilker (ed.) James J. Spilker per enge (contributor)	<i>Global positioning system : Theory and applications</i>	(American Inst. Of Aeronautics & Astronaulid	1996
5. James Bao Yen Tsui	<i>Fundamentals of Global Positioning system Receivers</i>	John Wiley & Sons	2005