

<b>Module Code</b>	<b>MA4032</b>	<b>Title</b>	<b>Time Series and Stochastic Processes</b>			
<b>Credits</b>	<b>03</b>	<b>Hours/Week</b>	<b>Lectures</b>	<b>02</b>	<b>Pre-requisites</b>	MA 1022 MA 3012
			<b>Lab/Tutorials</b>	<b>-</b>		
<b><u>Learning Objectives</u></b>						
<ul style="list-style-type: none"> <li>• To understand the various techniques of modeling time series data.</li> <li>• To understand the application of time series data.</li> <li>• To understand the principle of stochastic process</li> <li>• To understand the various stochastic modeling techniques</li> </ul>						
<b><u>Learning Outcomes</u></b>						
<ul style="list-style-type: none"> <li>• To choose the appropriate time series modeling technique for a given data.</li> <li>• To forecast in management and engineering applications.</li> <li>• To compare different time series analysis techniques in terms of forecasting accuracy.</li> <li>• To apply Markov chain techniques in modeling uncertain physical system</li> <li>• To apply Stochastic modeling techniques in OR problem such as Queuing and Waiting line models</li> </ul>						
<b><u>Outline Syllabus</u></b>						
<b><u>Time Series</u></b>						
Basic theory of stationary process; AR, MA, and ARMA models; seasonal adjustment. Some application in social and physical sciences.						
<b><u>Stochastic Process</u></b>						
An introduction to stochastic processes. Probability generating functions. Homogeneous Poisson process, Birth-Death process, stationary distributions, queuing theory, Markov chains.						