

<b>Module code</b>	TF-4302		
<b>Module Title</b>	Digital Communication Systems		
<b>Degree/Diploma</b>	Bachelor of Engineering Degree		
<b>Type of Module</b>	Major Option		
<b>Modular Credits</b>	2	<b>Total student workload</b>	4 hours/week
		<b>Contact hours</b>	2 hours/week
<b>Prerequisite</b>	TF-3303 Introduction to Communication Systems		
<b>Anti-requisite</b>	None		
<b>Aims</b>			
This module provides a broad coverage of the concepts used in digital communication systems. In particular the module covers topics related to source and channel coding, optimum receivers, channel capacity, bandlimited signals, spread spectrum signals and code division multiple access technology (CDMA).			
<b>Learning Outcomes:</b>			
<i>On successful completion of this module, a student will be expected to be able to:</i>			
Lower order :	30%	- read and interpret types of digital communication systems	
Middle order :	30%	- identify problems related to digital communication systems related to noise, channel capacity and bandwidth	
Higher order:	40%	<ul style="list-style-type: none"> <li>- compute the entropy of different source codes used in digital communication systems.</li> <li>- evaluate the effects of using different channel codes for digital communication systems with different characteristics.</li> <li>- present the information with proper descriptions justifying their applicability in different digital communication scenarios.</li> </ul>	
<b>Module Contents</b>			
<ul style="list-style-type: none"> <li>- Source coding and compression</li> <li>- Characterization of digital communication signals and systems</li> <li>- Optimum receivers for the additive white Gaussian noise channels</li> <li>- Channel capacity and coding</li> <li>- Block and convolutional channel codes</li> <li>- Signal design for bandlimited channels</li> <li>- Spread spectrum signals for digital communications</li> <li>- Code division multiple access technology (CDMA)</li> </ul>			
<b>Assessment</b>	Formative assessment		Quizzes and MCQs
	Summative assessment		Examination: 40%
			Coursework: 60% <ul style="list-style-type: none"> <li>- 2 class tests (15% each)</li> <li>- 2 assignments (10% each)</li> <li>- 1 oral presentation (10%)</li> </ul>