

<b>Module Title:</b>	<b>Digital Electronics 2 – Semester 2</b>
<b>Academic year:</b>	2009 – 2010
<b>Credit Value:</b>	5 – Mandatory
<b>Pre- requisites:</b>	Digital Electronics 1
<b>Assessment:</b>	60% Final Exam, 25% Practical. 15% Continuous Assessment (CA)
<b>Aims</b>	This subject aims to build on the logic fundamentals covered by digital electronics 1. The student considers circuits used in combinational logic design such as gates, adders, multiplexers and decoders. An alternative approach to discrete design is demonstrated with the use of programmable logic which prepares students for later design subjects. A preparation for sequential design methods is provided with a general introduction to the function of latches and flip flops. Topics such as the use of truth tables and timing diagrams are expanded.
<b>Module Content</b>	<ul style="list-style-type: none"> <li>• Coding schemes;</li> <li>• Decoders;</li> <li>• Encoders;</li> <li>• Multiplexers;</li> <li>• Programmable logic for combinational design;</li> <li>• Clock circuits;</li> <li>• Introduction to sequential devices.</li> </ul>
<b>Intended Learning Outcomes:</b>	<p><b>On successful completion of this module students should have the ability to:</b></p> <ol style="list-style-type: none"> <li>1. Optimise logic circuits using Karnaugh maps;</li> <li>2. Describe, use and design multiplexer, decoder, encoder and arithmetic circuits;</li> <li>3. Design combinational logic systems using PROMS and basic PLDs;</li> <li>4. Apply commonly used coding schemes;</li> <li>5. Design 555 timer clock circuits;</li> <li>6. Describe the construction and operation of data latch circuits and flip-flops;</li> <li>7. Use laboratory equipment and write reports.</li> </ol>