

| | | |
|---|---|---|
| SEMESTER <i>Fifth</i> | DEPARTMENT <i>Control Engineering</i> | COURSE TITLE <i>Digital Electronics II Lab.</i> |
| COURSE CODE <i>ET508</i> | HOURS : 3 UNITS : 1 | COURSE SPECIFICATIONS <i>Practical Content</i> |
| 1. Medium Scale Integration (MSI) components: <ul style="list-style-type: none"> ➤ Describe how to construct and test 2-bit magnitude comparator. ➤ Construct and test a 4-bit parallel adder IC. ➤ Converting 4-bit parallel adder into a 4-bit subtractor. ➤ Magnitude comparator using 4-bit parallel adder IC. ➤ Use a MSI 8-3 encoder and test it with various input combinations. ➤ Explain how to test the IC Multiplexers and IC Demultiplexers. | | |
| 2. The Memory Unit: <ul style="list-style-type: none"> ➤ Construct a memory cell using flip flop. | | |
| 3. Timing and switching circuits: <ul style="list-style-type: none"> ➤ Construct an Astable Multivibrator using 555 timer. ➤ Monostable Multivibrator design using 555 timer. | | |
| 4. Digital to Analog (D/A) and Analog to Digital (A/D) converters: <ul style="list-style-type: none"> ➤ R-2R Ladder D/ A converter. ➤ Use a typical IC A/D to perform a single analogue to digital conversion. | | |
| References: <ol style="list-style-type: none"> 1. Thomas P. Sitterlen and Vartan Vartanian, <i>Digital Electronics with Engineering Applications</i>, Prentice Hall. 2. Fred Hilsenrath and Bill Pierce, <i>Digital Logic Circuits and Systems</i>, Delmar Publishers Inc. 3. Ronald J. Tocci and Lester P. Laskowski, <i>Microprocessor and Microcomputers, Hardware and Software</i>, Prentice Hall. | | |