



Department of Electronics Engineering

Semester - VII

Unique Course Number: EXC701

Course Name: Embedded System Design

Unique CO Number	Course Outcome (CO) Statement
EXC7651	Apply concepts of Real Time Operating Systems using C/C++. (Application)
EXC7652	Identify sensors, interfacing techniques, design metrics in the design of embedded systems. (comprehension)
EXC7653	Describe architecture and applications of ARM CORTEX M3 and MSP 430 processors. (Knowledge)
EXC7654	LINUX and μ C-OS/II programming and select a specific embedded system as a case study and discuss fundamentals of design and development. (Analysis)

Unique Course Number: EXC702

Course Name: Computer Communication and Networks

Unique CO Number	Course Outcome (CO) Statement
EX7741	Describe basics of computer communication networks and components used in network and layered architecture.
EX7742	Explain data link services and protocols.
EX7743	Explain application layer protocols and QoS for network
EX7744	Design and analyze network layer protocols.

Unique Course Number: EXC703

Course Name: IC Technology

Unique CO Number	Course Outcome (CO) Statement
EXC7721	Demonstrate a clear understanding of CMOS fabrication flow and technology scaling
EXC7722	Demonstrate a clear understanding of various MOS fabrication processes, semiconductor measurements, packaging, testing and advanced semiconductor technologies

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EXC7723	Discuss physical mechanism in novel devices
EXC7724	Verify processes and device characteristics via simulations

Unique Course Number: EXC704

Course Name: Power Electronics-II

Unique CO Number	Course Outcome (CO) Statement
EXC7241	Analyze the effect of source inductance in 1 phase and 3 phase rectifiers.
EXC7242	Understand modern and advanced PWM techniques for 3 phase inverters and implement modelling of DC-DC converters.
EXC7243	Understand the industrial applications of power electronics.
EXC7244	Apply the knowledge of power electronics for controlling AC and DC motors.

Unique Course Number: EXC7052

Course Name: Artificial Intelligence

Unique CO Number	Course Outcome (CO) Statement
EX7431	Knowledge about different neural networks, their architecture and training algorithm
EX7432	Concept of Fuzzy logic, Fuzzy sets, Fuzzy rules and Fuzzy reasoning.
EX7433	Exposure to the applicability of neural networks
EX7434	Exposure to the applicability of fuzzy logic

Unique Course Number: EXC7051

Course Name: Digital Image Processing

Unique CO Number	Course Outcome (CO) Statement
EX7441	Understand the fundamentals of acquisition and representation of digital image
EX7442	Perform different enhancement operation in spatial and frequency domain



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EX7443	Employ different segmentation and morphological techniques on digital image
EX7444	Appreciate different image transform and apply in image compression and decompression

Unique Course Number: EXC706

Course Name: PROJECT-I

Unique CO Number	Course Outcome (CO) Statement
EXC7811	Identify the application of chosen field in professional practice
EXC7812	Design and develop industrial, practical application
EXC7813	Select design procedure for hardware/software for practical application
EXC7814	Work harmoniously in a team

LO STATMETENTS

Unique Course Number:EXL701

Course Name: Embedded Sytem Design Laboratory

Unique number	LO statement
EXL7651	Write program using mixed C/C++ and Assembly language for real time embedded system. (comprehension)
EXL7652	Implement ARM7 peripherals functionality using embedded C.(Knowledge)
EXL7653	Write programs to analyze the real time concepts simulating RTOS objects with C & LINUX.
EXL7654	Demonstrate programming in “uC/ OS-II “and steps to design embedded system using case study presentation.

Unique Course Number:EXL702

Course Name: IC Technology Laboratory



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Unique number	LO statement
EXL7721	The student should be able to understand the CMOS design rules and draw and simulate the layouts of universal gates.
EXL7722	The student should be able to design and draw the layout of CMOS design rules and draw the layouts of CMOS logic circuits and memories.
EXL7723	The student should be able to understand the concepts of various oxidation and diffusion processes and simulate the same using MATLAB.
EXL7724	The student should be able to understand construction and characteristics of novel devices and simulate the same.

Unique Course Number:EXL703 Course Name: Power Electronics-II Laboratory

Unique number	LO statement
EXL7241	Understand the working of DC-DC converters.
EXL7242	Apply the knowledge of power electronics circuits for industrial applications.
EXL7243	Understand the working of DC-AC converters using simulation tools.
EXL7244	Identify the effect of various passive components on AC-DC converter using simulation tools.

Unique Course Number:EXL704 Course Name: Computer Communication Network Laboratory

Unique number	LO statement
EXL7521	Identify network hardware components.
EXL7522	Simulate different protocols using network simulation software or turbo-C.
EXL7523	Configure routers and switches.
EXL7524	Use TCP/IP utility commands.

Unique Course Number:EXL7051 Course Name: Digital Image Processing Laboratory

Unique number	LO statement
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Mahavir Education Trust's

SHAH & ANCHOR ENGINEERING COLLEGE

Affiliated to University of Mumbai, Approved by D.T.E. & A.I.C.T.E. | Awarded 'A' Grade by D.T.E., M.S. | Electronics Engineering Program Accredited by N.B.A., New Delhi for 2 years w.e.f. 6th Aug., 2014 | Computer Engineering Program Re-Accredited by N.B.A., New Delhi for 3 years w.e.f. 1st July 2019 | Information Technology Program Accredited by N.B.A., New Delhi for 3 years w.e.f. 1st July 2019



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EXL7441	To understand the fundamentals of image representation
EXL7442	To implement enhancement technique in spatial and frequency domain
EXL7443	To perform image segmentation and morphological operations
EXL7444	To apply image compression algorithm to compress and decompress digital images