B.E.MBA integrated in ELECTRICAL & ELECTRONICS
V SEMESTER

<table>
<thead>
<tr>
<th>Ref No.</th>
<th>Subject</th>
<th>SCHEDULE OF TEACHING</th>
<th>SCHEME OF EXAMINATION</th>
<th>THEOREY</th>
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<td>Int  Ext  Hrs.  Total</td>
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<td>Power Systems-II</td>
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<td>Vocational Training after Fourth Semester</td>
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*marks refer to mid semester evaluation and end semester evaluation.
EE- 501
Power Systems-II

External: 50  L  T  P
Sessional: 50  3  1  0
Credits : 4

Note for Examiner- Examiner will set 7 questions of equal marks. First question will cover whole syllabus, having 5 conceptual questions of 2 marks each and is compulsory. Rest of the paper will be divided into two parts having three questions each and the candidate is required to attempt at least two questions from each part

PART-A

1. Power System Protection

   (12 hours)

2. Circuit Breakers
   Transient recovery voltage, resistance switching, first pole to clear factor, Transient recovery voltage, arc and arc extinction, volt ampere characteristics of arc, methods of arc extinction, construction, working and applications of air-break circuit breakers, oil circuit breakers, vacuum circuit breakers, air blast circuit breakers, SF6 circuit breakers, circuit breaker ratings.

   (13 hours)

PART B

3. Power System Overvoltages
   Causes of Overvoltages: Internal and external, Protection against over voltages by shielding or ground wires and lightning arrestors, Location of lightning arrestor, Selection of lightning arrestor, Basic insulation level, insulation coordination.

   (10 hours)

4. Grounding
   Grounding fundamentals, Ground resistance, step voltage, touch voltage and transferred voltage, tolerable step and touch voltages, ground resistance of a hemisphere and driven rod, Ground resistance, Step and Mesh voltages of a grounding grids
Neutral grounding: ungrounded systems, resonant grounding, solid or effective grounding, reactance grounding, earthing transformer, neutral grounding practice.  

(10 hours)

**TEXT BOOKS**

**OTHER RECOMMENDED BOOKS**

EE- 551  
POWER SYSTEMS II LAB

Marks: 50 L T P  
Credits : 1 0 0 2

Note: At least eight experiments / projects / technical reports relating to the following:  
1. Measurement of soil resistivity and soil model evaluation  
3. Grounding system design for a substation.  
4. To study the characteristics of over current relay.  
5. To study the characteristics of percentage differential relay.  
6. To study the characteristics of distance relay.  
7. To study current time characteristics of fuses.  
8. Technical visit to a substation/generating station, Load Dispatch Centre and preparation of a technical report for the same  
9. Conventional and renewable energy sources  
10. Distribution system design  
11. Digital relaying  
12. Reactive compensation of lines
EE- 503  
Microprocessors and Interfacing

External: 50         L T P  
Sessional: 50         3 1 0  
Credits : 4

Note for Examiner- Examiner will set 7 questions of equal marks. First question will cover whole syllabus, having 5 conceptual questions of 2 marks each and is compulsory. Rest of the paper will be divided into two parts having three questions each and the candidate is required to attempt at least two questions from each part

PART-A

1. Microprocessor Architecture and Microcomputer System  
Microprocessor Architecture & Operations, Memory, Input and Output Devices, The 8085 MPU, Example of an 8085-Based Microcomputer, Memory Interfacing.  

2. Programming the 8085  

3. Programming Techniques  

4. Counters And Time Delays  
Counters and Time Delays, Hexadecimal Counter, Modulo Ten Counter, Generating Pulse Waveforms  

5. Stack And Subroutines  
Stack Subroutine, Restart, Conditional Call and Return Instructions.  

PART-B

6. INTERRUPTS  
The 8085 Interrupt, 8085 Vectored interrupts. RIM, SIM  

7. Interfacing I/O Devices  
Basic Interfacing Concepts, Interfacing Output Displays, Interfacing Input Devices, Memory Mapped I/O  

8. Interfacing Data Converters
Digital- to- Analog (D/A) Converters, Analog- to- Digital (A/D) Converters (4 hours)

9. **General Purpose Programmable Peripheral Devices**
   The 8255 A Programmable Peripheral Interface- I/O Modes and BSR Mode (3 hours)

10. **Serial Communication**
    Basic communication concepts in serial I/O RS232C (3 hours)

11. **8086 Microprocessor**
    8086 CPU Architecture, segmented memory, addressing modes (4 hours)

**TEXT BOOKS**
- Ramesh S. Gaonkar, “Microprocessor Architecture, Programming and Applications with the 8085”, Penram International Publishing

**OTHER REFERENCE BOOKS**
2. Charles M. Gilmore, “Microprocessor Principles and Applications”, TMH.
3. Douglas V. Hall, “Microprocessors and Interfacing programming and Hardware” TMH.

**EE-553**
**MICROPROCESSORS AND INTERFACING LAB**

Marks: 50 L T P
Credits : 2 0 0 3

Note: Attempt any ten programs.

1. Study of 8085 Microprocessor kit
2. Write Assembly Language Program to add n given numbers with and without carry.
3. Write Assembly Language Program to count positive & negative numbers in given n numbers.
4. Write Assembly Language Program to de-assemble 8- bit number in two nibbles.
5. Write Assembly Language Program to reassemble two nibbles in 8- bit number.
6. Write Assembly Language Program to sort given n numbers in ascending order.
7. Write Assembly Language Program to relocate the given numbers in same & reverse order.
8. Write Assembly Language Program to add two 16 bit numbers
9. Write Assembly Language Program for addition but answer in decimal

Interfacing of Microprocessor 8085:

10. To obtain a square wave on CRO
11. To interface A to D converter
12. To interface D to A converter
13. To interface stepper motor with µp to control its step size and direction of rotation
14. To develop a traffic light controller program and interface using Input/Output Module

**EE-507**  
**Communication Engineering**

<table>
<thead>
<tr>
<th>External: 50</th>
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<tbody>
<tr>
<td>Sessional: 50</td>
<td>3 1 0</td>
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**Note for Examiner**- Examiner will set 7 questions of equal marks. First question will cover whole syllabus, having 5 conceptual questions of 2 marks each and is compulsory. Rest of the paper will be divided into two parts having three questions each and the candidate is required to attempt at least two questions from each part.

**PART-A**

1. **Amplitude Modulation & Demodulation And Systems**
   
   (14 hours)

2. **Frequency Modulation**
   - Principles and generation of FM and PM signals, Reactance Modulator method, Armstrong Method, noise consideration in FM and PM system.

   (7 hours)

**PART-B**

3. **Frequency Demodulation And Systems**
   - Detection of FM and PM signals, Foster Discriminator, ratio and PLL detectors, FM Transmitter (Block Diagram), FM receiver (Block Diagram), Pre-emphasis and de-emphasis circuit  
   
   (15 hours)

4. **Pulse Modulation & Demodulation**
   - Principles, generation and detection of PAM, PWM, PPM & PCM signals, noise in pulse modulation system, band width consideration, companding, delta modulation, adaptive delta modulation systems. TDM & FDM.  
   
   (9 hours)

**BOOKS RECOMMENDED:**

EE-558
Communication Engineering Lab

1. Study of amplitude modulation (AM).
2. Determine the modulation index of amplitude modulated (AM) wave.
4. Study of frequency modulated (FM) wave.
5. Study the demodulation of frequency modulated (FM) wave.
6. Determine the modulation index of frequency modulated (FM) wave.
7. Study of pulse amplitude modulation (PAM).
   (a) Study of pulse code modulation (PCM) transmitter.
   (b) Study of Pulse code modulation (PCM) receiver.

EE-508
Electromagnetic Fields Theory

External: 50 L T P
Sessional: 50 3 1 0
Credits : 4

Note for Examiner- Examiner will set 7 questions of equal marks. First question will cover whole syllabus, having 5 conceptual questions of 2 marks each and is compulsory. Rest of the paper will be divided into two parts having three questions each and the candidate is required to attempt at least two questions from each part

PART-A

1. Static Electric Fields

2. Static Magnetic Fields

PART-B

3. Electric And Magnetic Fields In Materials


4. Time Varying Electric And Magnetic Fields


TEXT BOOKS


OTHER BOOKS RECOMMENDED


EE-509
Power Electronics
Note for Examiner- Examiner will set 7 questions of equal marks. First question will cover whole syllabus, having 5 conceptual questions of 2 marks each and is compulsory. Rest of the paper will be divided into two parts having three questions each and the candidate is required to attempt at least two questions from each part

PART-A
1. Thyristor and Semiconductor Power Switching Devices
Devices of Thyristor family and their V-I characteristics: Thyristor, DIAC, TRIAC, GTO, MOSFET, IGBT, Principle of operation of SCR, two transistor model of SCR. Turn on methods of a Thyristor, Switching characteristics of Thyristor during turn-on and turn-off, Gate characteristics, Thyristor triggering.

Series and parallel operation of SCR’s, Thyristor specifications (latching current and holding current, dv/dt and di/dt etc.), Thyristor Protection circuits, UJT: characteristics and as a relaxation oscillator.

(15 hours)

2. SCR Commutation Circuits

(08 hours)

PART-B
3. Phase controlled Rectifiers

(12 hours)

4. DC-DC converters

(10 hours)
TEXT BOOKS RECOMMENDED

OTHER BOOKS RECOMMENDED

EE-553
Power Electronics Lab

Note: At least eight experiments are to be performed selecting at least three from experiment 7.
1. To plot the V-I characteristics of the SCR.
2. To draw V-I characteristics of Triac.
3. Study of R and RC triggering circuits for SCR.
4. To study and perform the triggering of SCR circuit through UJT firing.
5. Study of SCR commutation circuits and check the performance of one commutation circuit.
6. Study of Jones chopper or any chopper circuit to check the performance.
7. Design and simulation of following of circuit in MATLAB / other software.
   a) Rectifier circuit with RL Load
   b) Three phase thyristor converter
   c) Class-C commutation Circuit
   d) Buck or buck boost converter

MARKETING MANAGEMENT
Note for Examiner: Examiner will set 7 questions of equal marks. First question will cover whole syllabus, having 5 conceptual questions of 2 marks each and is compulsory. Rest of the paper will be divided into two parts having three questions each and the candidate is required to attempt at least two questions from each part.

Internal Assessment: 50  
External Assessment: 50  
Credits: 3

Part A
Introduction to Marketing: Definition; Scope and Importance of Marketing; Key Customer Markets; Concepts/Philosophies of Marketing; Holistic Marketing Concept; Marketing Tasks; Marketing Mix

Marketing Environment: Marketing Environment; New Marketing Realities; New Consumer Capabilities; Demographic Environment; Social-Cultural Environment; Natural Environment; Technological Environment and Political-Legal Environment; SWOT analysis.

Analyzing Markets: Marketing Research Process; Sources of data collection; factors influencing consumer behavior; buying decision process; post-purchase behavior; Organizational Buying; Stages in the Buying Process.

Market Segmentation: Levels of market segmentation; segmenting consumer markets; Niche Marketing; segmenting business markets; Michael Porter’s five forces model; Analyzing competitors; strategies for market leaders; Targeting and Positioning.

Part B
Product Decisions: Product characteristics; classifications; differentiation; packaging and labeling; Product Life Cycle.

Pricing Strategies: Understanding Pricing; Setting the Price; Initiating and Responding to Price Changes; Reactions to Competitor’s Price Changes.

Marketing Channels: Marketing Channels; Role of Marketing Channels; Identifying Major Channel Alternatives; Types of Intermediaries; Channel-Management Decisions, Retailing, Wholesaling.

Marketing Communication: The Role of Marketing Communications; Communications Mix-Advertising, Sales Promotion, Public Relations and Publicity, Events and Experiences, Direct and Interactive Marketing, Personal Selling.

References:
1. Principles of Marketing, Philip Kotler, Pearson
2. Marketing Management, R. Saxena, TMH
HUMAN RESOURCE MANAGEMENT

Course: BE-MBA  V th Semester

Paper – Compulsory

Paper Code: IBM- 502

Time: 3 Hours

Course Duration: 45 Lectures of one hour each.

Note for Examiner- Examiner will set 7 questions of equal marks. First question will cover whole syllabus, having 5 conceptual questions of 2 marks each and is compulsory. Rest of the paper will be divided into two parts having three questions each and the candidate is required to attempt at least two questions from each part

Internal Assessment: 50  
External Assessment: 50  
Credits :3

Part-A


Job analysis: Methods - IT and computerized skill inventory - Writing job specification - HR and the responsive organization.

Recruitment and selection process: Employment planning and forecasting – Building employee commitment: Promotion from within - Sources, Developing and Using application forms - IT and recruiting on the internet.

Employee Testing & selection: Selection process, basic testing concepts, types of test, work samples & simulation, selection techniques, interview, common interviewing mistakes, Designing & conducting the effective interview, small business applications, computer aided interview.

Part-B

Training & Development: Orientation & Training: Orienting the employees, the training process, need analysis, Training techniques, special purpose training. Training via the internet Performance appraisal: Methods - Problem and solutions - MBO approach – The appraisal interviews - Performance appraisal in practice.

Managing careers: Career planning and development - Managing promotions and transfers.


References: