

*Chhattisgarh Swami Vivekanand Technical University, Bilai (C G)*

SCHEME OF TEACHING AND EXAMINATION

**B.E. V SEMESTER MECHATRONICS ENGINEERING**

S. No.	Board of Study	Sub. Code	SUBJECT	PERIODS PER WEEK			SCHEME OF EXAM Theory/Practical			TOTAL MARKS	Credit L+(T+P)/2
				L	T	P	ESE	CT	TA		
1.	Electronics and Telecom	367511 (28)	Signal Processing Circuits	4	1	-	80	20	20	120	5
2.	Mech. Engg	337511 (37)	Machine Design - I	4	1	-	80	20	20	120	5
3.	Mech. Engg.	337513 (37)	Dynamics of Machines	4	1	-	80	20	20	120	5
4.	Mech. Engg.	367512 (37)	Manufacturing Technology	4	1	-	80	20	20	120	5
5.	Electronics and Telecom	328516 (28)	Automatic Control Systems	4	1	-	80	20	20	120	5
6.	Electronics and Telecom	328515 (28)	Microprocessor and Interfaces	3	1	-	80	20	20	120	4
7.	Mech. Engg.	337523 (37)	Dynamics of Machines Lab	-	-	2	40	-	20	60	1
8.	Mech. Engg.	367521 (37)	Computer Aided Drawing Lab	-	-	2	40	-	20	60	1
9.	Electronics and Telecom	328523 (28)	Microprocessor and Interfaces Lab	-	-	2	40	-	20	60	1
10.	Electronics and Telecom	367522 (28)	Signal Processing Circuits Lab	-	-	2	40	-	20	60	1
11.	Humanities	300525(46)	Personality Development	-	-	2	-	-	20	20	1
12.	Mech. Engg.	367523 (37)	** Practical Training Evaluation / Library	-	-	1	-	-	20	20	1
			Total	23	6	11	640	120	240	1000	35

**L – Lecture, T – Tutorial,**

**CT- Class Test, P – Practical, ESE- End Semester Exam, TA – Teacher’s Assessment**

\*\* To be completed after IV Sem. and before the commencement of V Sem.

## *Chhattisgarh Swami Vivekanand Technical University, Bhilai (C G)*

**Semester: V**

**Subject: Signal Processing Circuits**

**Total Theory Periods: 40**

**Total Marks in End Semester Examination: 80**

**Minimum number of Class tests to be conducted: Two**

**Branch: Mechatronics**

**Code: 367511 (28)**

**Total Tutorial Periods: 10**

### **UNIT – I**

**Operational Amplifiers:** OAMP Symbol and terminal characteristics, Block Schematic of OPAMP, Basics of Differential Amplifier, Ideal OPAMP Characteristics, Practical OPAMP Characteristics, Open Loop Configuration of OPAMP, Closed Loop Configuration of OPAMP. Input & Output impedance of closed loop OPAMP. Input Bias and Offset Currents, Low-input bias-Current Op Amps, Input Offset Voltage, Low-input-offset-Voltage Op Amps, Input Offset-error compensation, Inverting Amplifier, Non-Inverting Amplifier, Voltage Follower. Configuration of IC 741.

### **UNIT – II**

**Applications of OPAMP:** Comparator, Schmitt Trigger, Zero Crossing Detector, Level Detector, Window Detector, Precision Half Wave Rectifier, Precision Full Wave Rectifier, Current to Voltage and voltage to current Converter, Phase Shifter, Differential Amplifier, Bridge Amplifier, Instrumentation Amplifier. Differentiator, Integrator. Logarithmic amplifier,

### **UNIT – III**

**Signal Generators & Conditioners:** Square Wave Generator, Triangular Wave Generator, Sawtooth Wave generator, Clipper Circuits: Series Clipper, Parallel Clipper. Clamper Circuits: Negative Clamper, Positive Clamper. Passive Filters: High Pass, Low Pass and Band Pass filter using RC- expression for their Gain – BW Product. High Pass RC Circuit as Differentiator, Low Pass RC Circuit as Integrator. Voltage sweep generator, Current Sweep generator

### **UNIT – IV**

**Digital to Analog and Analog to Digital Converters:** D/A Converter using Binary Weighted Resistor Network and R-2R Ladder Network: Inverted Ladder Network: D/A Specification: Analog Switches: Sample & Hold Circuits; Analog Multiplexers, Parallel Comparator type A/D Converter, Successive Approximation A/D Converter, Counting & Dual Slope A/D Converter, A/D Converter using Voltage to Frequency and Voltage to Time Conversion, Delta Modulation type A/D Converter.

### **UNIT – V**

**Principles of Active Filters:** Bilinear Transfer Function, Parts of  $T(j\omega)$ , Classification of Magnitude and phase Response, Design. Cascading: Inverting and Non-inverting OP –AMP Circuits: Cascade Design: All pass Circuits. Biquadratic Transfer Function; Design parameters  $Q$  and  $\omega_0$ ; Biquad Circuit and its Frequency Response; Four op-amp Biquad and its Frequency Response.

### **Name of Text Books:**

1. Integrated Circuits by K. R. Botkar, Khanna Publications
2. Operational Amplifiers by R. Gayekwad, 4 th Ed., Pearson Education
3. Analog Filter Design; Van –Valkenburg ; Holt –Standers International Edn.

### **Name of Reference Books:**

1. Pulse, Digital and Switching Waveforms by Millman & Taub, TMH Publishing Co.
2. Integrated Electronics by Millman & Halkias, TMH Publishing Co.
3. Operational Amplifiers and Linear Integrated Circuits, Lal Kishore, PHI
4. Design and Applications of Analog Integrated Circuits, Soclof, PHI

## *Chhattisgarh Swami Vivekanand Technical University, Bhilai (C G)*

**Semester: V**

**Subject: Machine Design - I**

**Total Theory Periods: 50**

**Total Marks in End Semester Exam: 80**

**Minimum number of class tests to be conducted: 2**

**Branch: Mechanical Engg., Mechatronics Engg.**

**Code: 337511 (37)**

**Total Tutorial Periods: 12**

**Note: 1) Design data book by PSG and ISI data sheets are allowed in the examination.**

**2) The duration of the paper is 4 (four) hours.**

### **UNIT – I**

#### **General Considerations**

Selection of Materials, Design Stress, Factor of Safety, Stress concentration factor in tension, bending and torsion, theories of failures. Notch sensitivity, design stress for variable and repeated loads, fatigue stress concentration factor, endurance diagrams.

#### **Chain Drives**

Chain drives, roller chains, geometric relationships, dimensions of chain components polygonal effect, power rating of roller chains.

### **UNIT – II**

#### **Basic Elements Design**

Types of key and design, design of socket-spigot cotter joint, sleeve and cotter joint, gib and Cotter joint, design of Knuckle joint, design of splines.

### **UNIT- III**

#### **Threaded fasteners:**

Geometry of thread forms, terminology of screw threads and thread standards, specifications of steel bolts, initial tension, relation between bolt tension and torque, design of statically loaded tension joints, design of bolted joints due to eccentric loading.

#### **Power Screws**

Power screws, Force analysis-square and trapezoidal threads, Collar friction, Stresses in screw, coefficient of friction, efficiency of thread.

### **UNIT – IV**

#### **Riveted Joints**

Types of rivet heads, types of riveted joints, failure of riveted joint, strength of rivet joint, efficiency of riveted joint, design of riveted joint for boiler.

#### **Welded joint**

Types of welded joints, stresses in butt and fillet welds, strength of welded joints, location and dimension of weld design, eccentrically loaded joint, welded joint subjected to bending moment, design procedure, fillet welds under varying loads, stress relieving techniques.

### **UNIT – V**

#### **Shaft and Axles**

Transmission shaft, Design against static load, Design for strength, rigidity and stiffness, design under continuous loading for fatigue.

#### **Couplings**

Types of couplings, design of flange and flexible couplings, compression coupling, muff coupling.

### **TEXT BOOKS**

1. Design of Machine Elements from V.B. Bhandari, TMH Publications.
2. Machine Design by Shigley – McGraw Hill Pub.

### **REFERENCE BOOKS**

1. Machine Design - Mavnin – MIR Publishers
2. Machine Design - Sharma & Agrawal - Katson publications
3. Principles of Mechanical Design - R. Phelan – McGraw Hill Pub.
4. Machine Design - Suderraj Murthy – Khanna Publishers
5. Machine Design, theory & Practice – J. Michels Walter, E. Wilson Charles - Add MacMilan Publishers, New York.
6. Machine Design – Kulkarni – TMH
7. Machine Design – M. F. Spott – PHI

## *Chhattisgarh Swami Vivekanand Technical University, Bilai (C G)*

**Semester: V**

**Subject: Dynamics of Machines**

**Total Theory Periods: 50**

**Total Marks in End Semester Exam: 80**

**Minimum number of class tests to be conducted: 2**

**Branch: Mechanical Engg., Mechatronics Engg.**

**Code: 337513 (37)**

**Total Tutorial Periods: 12**

### **UNIT-I**

#### **Governors:**

Characteristics of centrifugal governors, gravity controlled governors such as Porter, and Proell. Spring controlled centrifugal governors such as Hartung, and Hartnell governor, performance parameters: sensitivity, stability, isochronism and hunting, governor effort and power

### **UNIT - II**

#### **Balancing:**

Balancing of rotating masses, static and dynamic balancing, determination of balancing masses in two plane balancing, balancing of internal combustion engines, balancing of in-line engines, firing order, balancing of V-twin and radial engines, forward and reverse crank method, balancing of rotors.

### **UNIT-III**

#### **Gyroscope:**

Gyroscopic forces and couple, gyroscopic stabilization of airplanes, ship motion and vehicles moving on curved path.

### **UNIT-IV**

#### **Mechanical Vibrations:**

One dimensional longitudinal, transverse, and torsional vibrations, natural frequency, effect of damping on vibrations, types of damping, different types of damping. Forced vibration, forces and displacement, transmissibility, vibration isolation, vibration sensors: seismometer and accelerometers

Whirling of shafts with single rotor.

### **UNIT-V**

#### **Inertia force analysis**

Effective force and inertia force of a link, Inertia forces in the reciprocating engine, Inertia forces in four bar chain.

#### **Turning moment diagram and flywheel**

Turning moment diagram for single and multi cylinder internal combustion engine, coefficient fluctuation of speed, coefficient of fluctuation of energy, flywheel

### **TEXT BOOKS**

1. Theory of Machine- S.S.Rattan - TMH.
2. Theory of Machine – Jagdish Lal – S.K. Kataria & Sons
3. Theory of Machines – J. E. Shigley – McGraw Hill

### **REFERENCE BOOKS**

1. Theory of Mechanisms and Machines- A. Ghosh, A. K. Mallik – EWP Press
2. The Theory of Machines - Thomas Bevan, - CBS Publishers
3. Mechanisms and Machine Theory - J. S. Rao, R. V. Duddipati - Wiley Eastern Limited

## *Chhattisgarh Swami Vivekanand Technical University, Bilai (C G)*

**Semester : V**

**Subject: Automatic Control Systems**

**Total Theory Periods: 40**

**Total Marks in End Semester Examination: 80**

**Minimum number of Class tests to be conducted: Two**

**Branch: Electronics & Telecommunication, Mechatronics**

**Code: 328516 (28)**

**Total Tutorial Periods: 10**

### **UNIT I**

**Mathematical Model of Physical Systems:** Differential Equation of Physical system. Transfer function, Block Diagram Algebra, signal flow graphs. Feedback characteristics of control systems. Feedback & Non feedback systems, reduction of parameter variation, control of system Dynamic. Control of the effect of dynamic signal by use of feedback, regeneration feedback.

### **UNIT II**

**Time Response Analysis:** Design specification and performance Indices. Standard Text signals, Time response of first and second order system, steady state error and error constants, Effect of adding a zero to a system. Design specification of second order system stability concept, Routh- Hurwitz stability criteria relation stability analysis.

### **UNIT III**

**Root Loci's Technique:** Root loci's concept construction for Root loci, Root contours, system with transportation by Polar Plots, Bode Plots. All pass and minimum phase system.

### **UNIT IV**

**Stability in Frequency Domain:** Nyquist stability criteria, Assessment of relation stability. Realization of basic compensators, Cascade compensation in time and frequency Domain. Feedback compensation.

### **UNIT V**

**State Variable Analysis and Design:** Concept of state variables and state model. State model for linear continuous time systems, Diagonalization, solution of state equation, concept of controllability and observability. Pole placement by state feedback.

### **TEXT BOOKS**

1. Control System Engineering, L. Nagrath and Gopal, New Age International Publications
2. Automatic Control System, B.C. Kuo, PHI

### **REFERENCE BOOKS**

1. Modern Control Engineering, Ogata, Pearson Education
2. Modern Control Engineering, Roychoudhury, PHI
3. Control Engineering – A Comprehensive Foundation, Ramakalyan, Vikas Publishing House Pvt. Ltd.
4. Introduction to Control Engineering, Ajit K. Mandal, New Age International Publications.

## *Chhattisgarh Swami Vivekanand Technical University, Bhilai (C G)*

**Semester : V**

**Subject: Microprocessor & Interfaces**

**Total Theory Periods: 40**

**Total Marks in End Semester Examination: 80**

**Minimum number of Class tests to be conducted: Two**

**Branch: AEI/CS/EI/EEE/ET&T/IT/Mechatronics**

**Code: 328515 (28)**

**Total Tutorial Periods: 12**

### **UNIT – I**

**Microprocessor Architecture:** Introduction to Microprocessors, Architecture of 8085, Pin Configuration and Function; internal register & flag register, Generation of Control Signals: Bus Timings: Demultiplexing of address /data bus; Fetch Cycle, Execute Cycle, Instruction Cycle, Instruction Timings and Operation Status, Timing Diagram.

### **UNIT – II**

**Instruction Set and Programming with 8085:** Instruction for Data Transfer. Arithmetic and Logical Operations. Branching Operation: Machine Cycle Concept; Addressing Modes; Instructions Format: Stacks. Subroutine and Related Instructions. Elementary Concepts of Assemblers, Assembler Directives, Looping and Counting: Software Counters with Time Delays: Simple Programs using Instruction Set of 8085: Debugging: Programs Involving Subroutines. Programs for Code Conversion e.g. BCD to Binary, Binary to BCD. Binary to Seven-Segment LED Display. Binary to ASCII. ASCII to Binary: Program for Addition Subtraction: Programs for Multiplication and Division of Unsigned Binary Numbers.

### **UNIT – III**

**Data Transfer and Device Selection:** Format of Data Transfer: Modes of Data Transfer: Type of I/O Addressing: Condition of Data Transfer: Microprocessor Controlled Data Transfer: Peripheral Controlled Data Transfer: Absolute and Linear Select Decoding: Memory and I/O Interfacing: Use of Decoders Selection: Memory organization and Mapping.

### **UNIT – IV**

**Interrupts:** Restart Instruction; Hardware Implementation: Interrupt Processing; Multiple Interrupts and Priority Concepts: Interrupt Structure of 8085: Instructions related to interrupts: Pending Interrupts: Use of Interrupt and Handshaking Signals in Interfacing: Application of Interrupts and Illustrative Programs.

### **UNIT – V**

**Architecture of Peripheral Interfacing Devices:** Architecture, Pin Diagram and functioning of 8155/8156 (RAM), 8355/8755 (ROM), 8255 (PPI). Simple programs like Initialization and I/O operations of the ports, Timer operation of 8155.

Programmable Internal Timer 8253/8254: Block Diagram, Pin Configuration, Modes, Initialization Instruction, Interfacing and Simple Programmes to generate various types of signals.

Architecture, Pin diagram, description and initialization of Keyboard and display interface (8279), USART (8251)

### **TEXT BOOKS**

1. Microprocessor Architecture, Programming and Application by R. S. Gaonkar, Wiley Eastern
2. Digital Systems – From Gates to Microprocessors by Sanjay K. Bose, New Age International Publishers.

### **REFERENCE BOOKS**

1. 8085 Microprocessor Programming & Interfacing – N.K. Srinath, PHI
2. Digital Computer Electronics – Malvino, TMH
3. Microprocessors: Theory and Applications – Intel and Motorola, Rafiquzzaman, PHI.
4. 0000 to 8085: Introduction to Microprocessor for Engineers and Scientists, Ghosh & Sridhar, PHI

## *Chhattisgarh Swami Vivekanand Technical University, Bhilai (C G)*

**Semester: B.E. V Sem.**

**Subject: Dynamics of Machines Lab**

**Total Practical Periods: 28**

**Total Marks in End Semester Exam: 40**

**Branch: Mechanical Engg. Mechatronics Engg.**

**Code: 337523 (37)**

### **EXPERIMENTS TO BE PERFORMED (MINIMUM TEN EXPERIMENTS)**

1. To find out the oscillations of simple pendulum with universal vibration apparatus.
2. To find out the oscillations of Compound pendulum with universal vibration apparatus.
3. To find out the radius of gyration of bi-filler suspension with universal vibration apparatus.
4. To find out undamped torsional vibrations of single rotor system with universal vibration apparatus..
5. To find out the frequency of damped torsional vibration of single rotor system with universal vibration vibration apparatus.
6. To measure the frequency of torsional vibrations of single rotor system with universal vibration apparatus.
7. To measure the frequency of torsional vibrations of double rotor system with universal vibration apparatus.
8. To find out free vibration of helical coiled spring with universal vibration apparatus.
9. To study forced damped vibration of a spring mass system and simple supported beam with universal vibration apparatus.
10. To find out the Gyroscopic couple and prove the Gyroscopic law with Gyroscope apparatus.
11. To find out the Power and effort of Proel, Porter & Hartnell Governor with Governor Apparatus.
12. To find out the critical speed for different diameters of shaft by whirling of shaft apparatus.
13. To verify the static and dynamic balancing for different planes and masses by balancing apparatus.

### **LIST OF EQUIPMENTS/MACHINES REQUIRED**

1. Universal Vibration Apparatus
2. Whirling Of Shaft Apparatus.
3. Balancing Apparatus (Both Static & Dynamic)
4. Epicyclic Gear Train And Holding Torque Apparatus
5. Gyroscope apparatus
6. Governor apparatus with differential attachments

*Chhattisgarh Swami Vivekanand Technical University, Bilai (C G)*

**Semester: B.E. V Sem.**

**Branch: Mechatronics Engg.**

**Subject: Computer Aided Drawing**

**Lab Code: 367521 (37)**

**Total Practical Periods: 28**

**Total Marks in End Semester Exam: 40**

**EXPERIMENTS TO BE PERFORMED (MINIMUM TEN NUMBERS)**

1. Introduction to integrated development environment of AutoCAD release 2000 or higher version
2. Basic drawing commands example: - LINE, POLYLINE, MULTILINE, POLYGON, CIRCLE, ELLIPSE, etc.
3. Basic editing commands e.g. - COPY, MOVE, ROTATE, MIRROR, CHAMFER, FILLET and array command as well as zoom and pan command.
4. Text command, TEXT, DTEXT, MTEXT.
5. Creation and insertion of blocks
6. Concept of layers and view ports
7. Creation of assembly drawing of stuffing box using above commands.
8. Dimensioning of stuffing box and showing the assembled view and its components in different view ports.
9. View port setting for 3D drawing and use of extrude command.
10. Generation of solid of revolution.
11. Conversion of assembly drawing of stuffing box from 2D to 3D.
12. Placement of 3D assembly drawing of stuffing box and placing views in different view ports

**LIST OF EQUIPMENTS/MACHINES REQUIRED**

P-IV (IBM) 2.6 GHz, 80 GB HDD, 256/512 SD RAM (Compatible with CAD Software), 52 X CD RW, 1.44 MB FDD, 17" Colour Monitor, Laser Scroll Mouse

## *Chhattisgarh Swami Vivekanand Technical University, Bilai (C G)*

**Semester : V**

**Subject: Microprocessor & Interfaces Lab**

**Total Practical Periods: 50**

**Total Marks in End Semester Examination: 40**

**Branch: Electronics & Telecommunication, Mechatronics**

**Lab Code: 328523 (28)**

**Programmes to be executed (but should not be limited to):**

**1. REVERSING AN ARRAY :**

A Block of 16 bytes are residing at locations starting from BLOCK 1 WAP to transfer the block in reverse order at locations starting from BLOCK 2.

**2. SORTING IN ASCENDING ORDER :**

A block ( 16 bytes are residing at locations starting from DATA :Write a program to arrange the word in the same location in ascending order

**3. BINARY ADDITION :**

16 bytes are residing at location starting from DATA WAP : to add all bytes and store the result location SUM and SUM + 1

**4. BCD ADDITION :** 16 BCD NUMBER are residing at location starting from DATA WAP to add all bytes and store the result location SUM and SUM + 1

**5. MULTIPLICATION :**

Two bytes are residing at location DATA 1 and DATA 2 Write a program to multiply the two bytes and store the result at location PROD 1 and PROD 2 .

**6. BINARY TO BCD :**

A binary number is residing at location BIN > WAP to convert the binary number in to its equivalent BCD and store the result at BCD and BCD + 1

**7. BCD TO BINARY :**

A BCD number is residing at location BCD ; Write a program to convert the BCDnumber into its equivalent binary and store the result at BIN

**8. MULTIBYTE ADDITION :**

Two 10 bytes are residing at location starting from DATA 1 and DATA 2 respectively , Write a program two add them up and store the result at location starting from RESULT (result space 11 bytes )

**9. MULTIBYTE BCD ADDITION :**

Two 6 digit BCD numbers are residing at location starting from DATA 1and DATA 2 respectively. Write a program to add them up and store the result at locations starting fromRESULT (Result space 7 bytes )

**10. RST 6.5 :**

A block of 16 bytes is residing at location starting from ; DATA Reverse the block and store the bytes at REVERSE whenever the RST 6.5 key is pressed.

**11. EDITING OF ASCII STRING :**

A string of ASCII characters is residing at locations starting from READ which contain “ I \$ WILL \$ BE \$ AN \$ ENGINEER “. Edit string in such a way that it should contain “ I \$ will \$ be \$ Engineer “. Keep the edited string in the same locations. Product the string from further editing . ( \$ stands for a blank )

**12. SIGNED BINARY ADDITION:**

A block of 16 signed binary numbers is residing at locations NUMBERS Add them up and store the result ( in signed binary ) at locations from RESULT.

**13. ASCII CODE CONVERSION :**

A string of 16 ASCII characters are residing at locations starting from DATA . The string consists of codes for capital letters, small letters and BCD digits ( 0-9 ) . Convert the ASCII characters . In such a way that the codes for capital letters be converted into corresponding codes for small letters, codes for small letters into that of capital letters and codes for BCD digits into that of BCD numbers and store them at the same locations.

**14. PARITY CHECK:**

A block of 32 bytes is residing at DATA count the number (BCD) of times even and odd PARITY bytes are appearing consecutive memory locations. Keep the count at MATCH.

**15. SERIES GENERATION :**

Two BCD numbers a and b are residing at locations DATA 1 and DATA 2 respectively . Write a program to form a series in BCD with the elements of a.  $a + 2b$  ,  $a + 4b$  ,  $a + 6b$  ,..... Stop the generation of the series whenever any element of the series in BCD with the elements o the series exceeds (99). Store the result at locations starting from RESULT. Count the number (BCD) of elements in the series and store it at NUMBER.

**List of Equipments/Machine Required:**

8085 based microprocessor kit, MASM assembler, 8085 simulator, PCs.

**Recommended Books:**

8085 Microprocessor Programming & Interfacing – N.K. Srinath, PHI

## *Chhattisgarh Swami Vivekanand Technical University, Bhilai (C G)*

**Semester: V**

**Subject: Signal Processing Circuits Lab**

**Total Practical Periods: 24**

**Total Marks in End Semester Examination: 40**

**Branch: Mechatronics**

**Code: 367522 (28)**

**List of Experiments to be performed:** (At least 12 experiments are to be performed out of the following list of experiments)

1. To design a Bistable multivibrator circuit and to draw its output waveform.
2. To design a Monostable multivibrator circuit and to draw its output waveform.
3. To design a Astable multivibrator circuit and to draw its output waveform.
4. To design an inverting amplifier using OPAMP (741) and study its frequency response.
5. To design a non-inverting amplifier using OPAMP (741) and study its frequency response.
6. To design a summing amplifier using opamp (741)
7. To design a differential amplifier using opamp (741) and find its CMRR.
8. To determine SVRR and slew rate of an opamp (741)
9. To design an astable multivibrator using 555 timer
10. To design a monostable multivibrator using 555 timer.
11. To design and study a diode clamper circuit.
12. To design and study diode series and shunt clipper.
13. To measure the input impedance of an voltage follower using opamp (741)
14. To design and study comparator circuit using opamp (741)
15. To design a LPF using R & C and to study its characteristics
16. To design a HPF using R & C and to study its characteristics
17. To design a BPF using R & C and to study its characteristics
18. To design All Pass filter using OPAMP and to plot its frequency response.
19. To design Bandpass filter using OPAMP and to plot its frequency response.
20. To design a DAC using Weighted Resistor method.
21. To design a ADC using parallel comparator method.
22. To design HPF using OPAMP.
23. To design LPF using OPAMP.
24. To design HPF (Multistage) using OPAMP.

**List of Equipments/Machine Required:**

Discrete Components, Function Generator, Power Supply, CRO, AVO Meter, Multimeter, Voltmeter

**Recommended Books:**

1. Integrated Circuits: K. R. Botkar, Khanna Publishers.
2. Laboratory Manual for Operational Amplifiers and Linear ICs, David Bell, PHI

## *Chhattisgarh Swami Vivekanand Technical University, Bhilai (C G)*

**Semester: B.E. V**

**Subject: Personality Development**

**No. of Periods : 2 pds/week**

**Total Marks in End Semester Exam. : NIL**

**Minimum number of class tests to be conducted: Two**

**Branch: Common to All Branches**

**Code: 300525 (46)**

**Tutorial Periods : NIL**

**Teacher's Assessment: 20Marks**

**Objective:** The course is introduced to develop one's outer and inner personality tremendously and enrich the abilities to enable one to meet the challenges associated with different job levels. Personality Development is essential for overall development of an individual apart from gaining technical knowledge in the subject.

### **Unit – I**

#### **Personality concepts:**

What is Personality – **its physical and psychic aspects. How to develop a positive self-image. How to aim at Excellence. How to apply the cosmic laws that govern life and personality.**

How to improve Memory. **How to develop successful learning skills. How to develop and effectively use one's creative power.**

**How to apply the individual MOTIVATORS that make you a self-power personality.**

### **Unit – II**

#### **Interpersonal Skills:**

**Leadership:** Leaders who make a difference, Leadership: your idea, What do we know about leadership?

If you are serious about Excellence. Concepts of leadership, Two important keys to effective leadership, Principles of leadership, Factors of leadership, Attributes.

**Listening:** Listening skills, How to listen, Saying a lot- just by listening, The words and the music, How to talk to a disturbed person, Listening and sometimes challenging.

**How to win friends** and influence people, How to get along with others. How to develop art of convincing others. How can one make the difference. How to deal with others particularly elders. Conflicts and cooperation.

### **Unit – III**

#### **Attitudinal Changes:**

**Meaning of attitude**, benefits of positive attitudes, how to develop the habit of positive thinking.

**Negative attitude and wining:** What is FEAR and how to win it. How to win loneliness. How to win over FAILURE. How to win over PAIN. How to win over one's ANGER and others anger. How to overcome CRITICISM. What is stress and how to cope up with it? What is crisis and how to manage it.

How to apply the **character MOTIVATORS** that elevate you and your personality to the top, the art of self motivation.

How to acquire **mental well-being.**

How to acquire **physical well-being.**

How to formulate effective **success philosophy.**

### **Unit –IV**

#### **Decision Making:**

How to make your own LUCK. How to plan goals/objectives and action plan to achieve them. How to make RIGHT DECISION and overcome problems. How to make a Decision. Decision making : A question of style. Which style, when ? People decisions : The key decisions. What do we know about group decision making ?

General aids towards improving group decision making. More tips for decisions of importance.

### **Unit – V**

#### **Communication Skills:**

**Public Speaking:** Importance of Public speaking for professionals. The art of Speaking - Forget the fear of presentation, Symptoms of stage fear, Main reason for speech failure, Stop failures by acquiring Information; Preparation & designing of speech, Skills to impress in public speaking & Conversation, Use of presentation aids & media.

**Study & Examination:** How to tackle examination, How to develop successful study skills.

**Group discussions:** Purpose of GD, What factors contribute to group worthiness, Roles to be played in GD.

### **REFERENCE BOOKS :**

1. How to Develop a Pleasing Personality by Atul John Rego, Better yourself books, Mumbai, 2000.
2. How to Succeed by Brain Adams, Better Yourself books, Mumbai, 1969.
3. Basic Managerial skills for all by E. H McGrawth, Prentice Hall India Pvt Ltd, 2006.
4. The Powerful Personality by Dr Ujjawal Patni & Dr Pratap Deshmukh, Medident Publisher, 2006.
5. Great Words Win Hearts by Dr Ujjwal Patni, Fusion Books, 2006.
6. Personality : Classic Theories & Modern Research; Friedman ; Pearson Education 2006.
7. How to Win Friends and Influence People by Dale Carnegie, A.H. Wheeler 2006.