



MAHARASHTRA INSTITUTE OF TECHNOLOGY

Chh. Sambhajinagar

(An Autonomous Institute)

Department of Electrical Engineering

INSTRUCTIONAL SYSTEM DESIGN

Class: **S.Y.B.Tech(Autonomous)**

Course: **EED202 Analog and Digital Electronics**

Step 1: Write Course Outcomes using Revised Bloom's Taxonomy

Structure of a CO statement

- **Action:** Represents a cognitive/ affective/ psychomotor activity the learner should perform. An action is indicated by an action verb, occasionally two, representing the concerned cognitive process(es).
- **Knowledge:** Represents the specific knowledge from any one or more of the eight knowledge categories
- **Condition:** Represents the process the learner is expected to follow or the condition under which to perform the action (This is an optional element of CO)
- **Criteria:** Represent the parameters that characterize the acceptability levels of performing the action (This is an optional element of CO)

CO1	Illustrate working principle of BJT and basic electronic circuits (clipper, clamper and bridge rectifier with filters)
CO2	Explain working of basic Oscillators, amplifiers and OPAMP.
CO3	Demonstrate different number systems.
CO4	Describe Boolean algebra and minimize combinational functions
CO5	Design and verify combinational and sequential circuits.
CO6	Observe the operation of various analog circuit.

Step 2: Locate COs in Revised Bloom-Vincenti Taxonomy Table

Locating Sample CO in Revised Bloom-Vincenti Taxonomy Table

Cognitive Processes	Knowledge Categories							
	Factual	Conceptual	Procedural	Metacognitive	Fundamental Design Principles	Criteria & Specifications	Practical Constraints	Design Instrumentalities
Remember			CO1					
Understand		CO1, CO2	CO2					
Apply		CO3	CO3					

CO2	2	1						1	
CO3	2							1	
CO4	2							1	
CO5	2		1					1	
CO6	3							1	
Average	2.33	1.0	1.0					1.0	
Mapping Strength	2.0	1.0	1.0					1.0	

Step 5: Identify the Assessment Items/Assessment Instruments, Delivery Technologies and Instruction types.

Cos	Assessment Items/Assessment Instruments		Delivery Technologies	Instruction types
CO1	MSE-I	ESD	Chalk & Board PPT Presentation Video Lecture	Teaching Plan
CO2	MSE-I, TA	ESD	Chalk & Board PPT Presentation Video Lecture	Teaching Plan
CO3	MSE-II	ESD	Chalk & Board PPT Presentation Video Lecture	Teaching Plan
CO4	MSE-II , CIE 1	ESD	Chalk & Board PPT Presentation Video Lecture	Teaching Plan
CO5	Rubrics	PR Exam	Practical Session Chalk & Board	Practical Teaching Plan
CO6	Rubrics, CIE2	PR Exam	Practical Session Chalk & Board	Practical Teaching Plan

Dr. Shilpa Kodgire

Course Coordinator

Dr.S.M.Badave

HEED

CO1: Apply the knowledge of basic circuit law and analyze the circuit using Kirchhoff's law.	2	2		1	2								
CO2: Simplify the network using reduction techniques and Network simplification theorems.	1	3		3	2								
CO3: Analyze circuits using graph theory.	1			3									
CO4: Infer and evaluate transient response, Steady state response, network functions.	1			3	2								
CO5: Apply the Laplace transform to linear circuits and systems.	2	3		2	2								
CO6: Evaluate two-port network parameters and synthesize one port network.	2	2											

Step 5: Identify the Assessment Items/Assessment Instruments, Delivery Technologies and Instruction types.

Cos	Assessment Items/Assessment Instruments		Delivery Technologies	Instruction types
CO1	ISE-1, TA1	ESE	Chalk & Board, PPT Presentation Video Lecture	Teaching Plan
CO2	ISE-1, CIE1	ESE	Chalk & Board, PPT Presentation Video Lecture	Teaching Plan
CO3	ISE-2 CIE1	ESE	Chalk & Board, PPT Presentation Video Lecture	Teaching Plan
CO4	ISE-2 CIE1	ESE	Chalk & Board, PPT Presentation Video Lecture	Teaching Plan
CO5	CIE2	ESE	Chalk & Board, PPT Presentation Video Lecture	Teaching Plan
CO6		ESE	Chalk & Board, PPT Presentation Video Lecture	Teaching Plan

Dr. A. S. Borole
Course Coordinator

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INSTRUCTIONAL SYSTEM DESIGN

Class: **S.Y.B.Tech(EE)**

Course: **EED211 Python Programming and Data Structures**

Step 1: Write Course Outcomes using Revised Bloom’s Taxonomy

Structure of a CO statement

- **Action:** Represents a cognitive/ affective/ psychomotor activity the learner should perform. An action is indicated by an action verb, occasionally two, representing the concerned cognitive process(es).
- **Knowledge:** Represents the specific knowledge from any one or more of the eight knowledge categories
- **Condition:** Represents the process the learner is expected to follow or the condition under which to perform the action (This is an optional element of CO)
- **Criteria:** Represent the parameters that characterize the acceptability levels of performing the action (This is an optional element of CO)
- CO1: Use basic Python programming concepts and operations.
- CO2: Draw the flowchart and design an algorithm for a given problem and to develop python programs using operators to find its solution.
- CO3: Develop conditional and iterative statements to write python programs which uses Arithmetic,
Logical, Relational operators.
- CO4: Design and implement the python code using user defined functions.

Step 2: Locate COs in Revised Bloom-Vincenti Taxonomy Table

Locating Sample CO in Revised Bloom-Vincenti Taxonomy Table

Cognitive Processes	Knowledge Categories							
	Factual	Conceptual	Procedural	Metacognitive	Fundamental Design Principles	Criteria & Specifications	Practical Constraints	Design instrumentalities

Remember	CO1						
Understand		CO1, CO2	CO2				
Apply		CO3	CO3				
Analyze				CO4			
Evaluate							
Create							

Step 3: Tag course outcomes with Program Outcomes (POs,) Program Specific Outcomes (PSOs,) Cognitive Level (CL), Knowledge Categories (KC), number of Class/ Laboratory/ Field sessions, and present it in the table format indicated with sample course **Analog Devices and Circuits - Credits: 3:1:0**

	Course Outcome	POs/ PSOs	CL	KC	Class Sessions	Tutorial (Hrs)
CO1	Use basic Python programming concepts and operations.	PO1 PO12,	R	F	4	00
CO2	Draw the flowchart and design an algorithm for a given problem and to develop python programs using operators to find its solution.	PO1,P O2,PO 12,	U	P, C	6	00
CO3	Develop conditional and iterative statements to write python programs which uses Arithmetic, Logical, Relational operators	PO1, PO12,	Ap	C, M	6	00
CO4	Design and implement the python code using user defined functions.	PO1, PO12	An	C, M,	4	00
Total Hours of instruction					28	00

Cognitive levels

R-Remember, U-Understand, Ap- Apply, An-Analyse, E-Evaluate and C-Create.

Categories of Knowledge

General Categories - F- Factual, C- Conceptual, P- Procedural, M-Metacognitive

Categories specific to Engineering

FDP- Fundamental Design Principles, C&S-Criteria and Specifications, PS- Practical Constraints,
DI- Design Instrumentalities

FDP- Fundamental Design Principles, C&S-Criteria and Specifications, PS- Practical Constraints,
DI- Design Instrumentalities

Step 4: Decide on Strength of CO-PO/PSO Mapping

Example (Showing only non-zero mapping entries):

CO	PO1	PO2	PO3	PO5	PO10	PO11	PO12	PSO1	PSO3
CO1	2	-	-	-	-	-	2	1	
CO2	2	2	-	-	-	-	2	1	-
CO3	2	-	-	-	-	-	2	1	-
CO4	2	-	-	-	-	-	2	-	1
Average	2.0	2.0	-	-	-	-	2.0	-	-
Mapping Strength	2.0	2.0	-	-	-	-	2.0	1	1

Step 5: Identify the Assessment Items/Assessment Instruments, Delivery Technologies and Instruction types.

Cos	Assessment Items/Assessment Instruments		Delivery Technologies	Instruction types
CO1	ISE-I/CIE-I/ Teacher Assessment	ESD	Chalk & Board PPT Presentation Video Lecture	Teaching Plan
CO2	ISE-I/ CIE-I/ Teacher Assessment	ESD	Chalk & Board PPT Presentation Video Lecture	Teaching Plan
CO3	ISE-II / Teacher Assessment	ESD	Chalk & Board PPT Presentation Video Lecture	Teaching Plan
CO4	ISE-II / Teacher Assessment	ESD	Chalk & Board PPT Presentation Video Lecture	Teaching Plan
CO5	CIE-II(Model Making)	ESD	Chalk & Board PPT Presentation Video Lecture	Teaching Plan
CO6	CIE-II(Model Making)	ESD	Chalk & Board PPT Presentation Video Lecture	Teaching Plan

Ms. R.B. Palwe
Course Coordinator

Dr.S.M.Badave
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INSTRUCTIONAL SYSTEM DESIGN

Course Coordinator: **Mr. Syed Imran Ali**

Course code & Course Title: **OE241 E Electrical, Fire and Vehicle Safety**

Class: **SY (B.tech)**

Semester : III

Course Outcomes:

- CO1: Understand basic electrical safety provisions, OSHA standards, and the impact of electrical current on the human body.
- CO2: Study the causes, severity, and prevention of electric shocks, including first aid and accident management techniques.
- CO3: Identify causes and types of electrical fires, and understand fire prevention and protection strategies.
- CO4: Understand battery location and design considerations for electric vehicles.
- CO5: Explore electric vehicle components, battery types, associated hazards, and safety measures at charging stations.
- CO6: Understand the scope of the Indian Electricity Act and Rules, safety requirements for electrical installations, and standards for electric vehicles.

Locating Sample CO in Revised Bloom-Vincenti Taxonomy Table

Cognitive Processes	Knowledge Categories							
	Factual	Conceptual	Procedural	Meta-cognitive	Fundamental Design Principles	Criteria & Specifications	Practical Constraints	Design instrumentalities
Explain	C01							
Discuss		C02						
Explain	C03	C03						
Discuss	C04	C04	C04					
Discuss	C05	C05	C05					
Discuss	C06	C06	C06					

C01	2			1	1			1
C02	2	1				1	1	
C03	2			1	1		1	
C04	1		1				1	
C05	2	1	2				1	
C06	2	2				1		
Average	2	1.6						
Mapping Strength	2	2						

Step 5: Identify the Assessment Items/Assessment Instruments, Delivery Technologies and Instruction types.

Cos	Assessment Items/Assessment Instruments		Delivery Technologies	Instruction types
C01	ISE - I	ESE	Chalk & Board PPT Presentation Video Lecture	Teaching Plan
C02	ISE - I	ESE	Chalk & Board PPT Presentation Video Lecture	Teaching Plan
C03	ISE -II	ESE	Chalk & Board PPT Presentation Video Lecture	Teaching Plan
C04	ISE -II	ESE	Chalk & Board PPT Presentation Video Lecture	Teaching Plan
C05	Teacher Assessment	ESE	Chalk & Board PPT Presentation Video Lecture	Teaching Plan
C06	Continuous Internal Assessment	ESE	Chalk & Board PPT Presentation Video Lecture	Teaching Plan

Syed Imran Ali
Course Teacher