



Course Specification
Principles of Electronic
Engineering
(ELE121)

Delta Higher Institute for
 Engineering & Technology

1- Basic Information:

Program Title	Communications and Electronics Engineering
Department Offering the Program	Communications and Electronics Engineering
Department Responsible for the Course	Communications and Electronics Engineering
Course Title	Principles of Electronic Engineering
Course Code	ELE121
Year/Level	Level 1
Specialization	Minor
Authorization Date of Course Specification	1/11/2015

Teaching hours	Credit	Lectures	Tutorial	Practical
	3	2	1	0

2- Course Aims:

No.	Aims
1.	To use current advanced techniques, skills, and tools necessary for computing practices to specify semiconductors materials, design, and implement Electronics elements as diodes and transistors.

3- Intended Learning Outcomes (ILO'S):

A. Knowledge and understanding:

No.	Knowledge and understanding
a4	Describe principles of design including elements design, process and/or a system related to semiconductors materials.
a8	Define current engineering technologies as related to diodes and transistors

B. Intellectual Skills:

No.	Intellectual Skills
b5	Assess and evaluate the characteristics and performance of semiconductor materials.
b6	Investigate the failure of components, systems, and processes in design of diodes and BJTs.

C. Professional Skills:

No.	Professional Skills
C3	Create and/or re-design a process, component or system, and carry out specialized engineering designs.

D. General Skills:

No.	General Skills
d7	Search for information and engage in life-long self -learning in electronics.



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4. Course Contents:

No.	Topics	Lectures	Tutorial	Practical
1	Electronic components	2	1	-
2	The characteristics of conductors, insulators and semiconductors	2	1	-
3	PN junction diodes	4	2	-
4	Diode circuits applications.	4	2	-
5	Half wave and Full wave rectifiers	2	1	-
6	Special diodes.	2	1	-
7	Rectifiers and peak detectors.	2	1	-
8	Bipolar junction transistors (BJT)	2	1	-
9	BJT common modes	4	2	-

5. Teaching and learning methods:

No.	Teaching Methods
1	Lectures
2	Discussion sessions
3	Information collection from different sources
4	Research assignment

6. Teaching and learning methods for disable students:

No.	Teaching Methods	Reason
1	Additional Section	Little understanding in class
2	Reports	To recover his state

7. Student evaluation:

7.1 Student evaluation method:

No.	Evaluation Method	ILO's
1	Midterm examination	a4, b5
2	Semester work	a4,a8, b5, b6,c3
3	Quizzes	a4,a8, b5, b6,c3
4	Final term examination	a4,a8, b6



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7.2 Evaluation Schedule:

No.	Evaluation Method	Weeks
1	Midterm examination	8
2	Semester work	5, 10
3	Quizzes	3,6,12
4	Final term examination	15

7.3 weighting of Evaluation:

No.	evaluation method	Weights
1	Mid-term examination	20%
2	final examination	60%
3	Oral examination	-
4	Practical examination	-
5	Semester work	10%
6	Quizzes	10%
	Total	100%

8. List of References:

No.	Reference List
1	W. Roadstrum and D. H. Wolaver, Electrical Engineering for All Engineers, J. Wiley & Sons Inc., New York, 1994.
2	Albert Malvino and David J. Bates, Electronics Principles, 2007
3	Thomas L. Floyd, Electronic devices : conventional current version, 9 th ed. Prentice Hall, 2012
4	Robert L. Boylestad, Electronic devices and circuit theory, 11th Edition , Prentice hall,2013
5	Thomas L. Floyd, Electronic Devices, Global Edition, 10 th ed. Prentice Hall, 2017

9. Facilities required for teaching and learning:

No.	Facility
1	Lecture classroom
2	Presentation
3	White board
4	Data show system



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10. Matrix of knowledge and skills of the course:

No.	Topic	Aims	Knowledge and understanding	Intellectual Skills	Professional Skills	General Skills
1	Electronic components	1	a4			
2	The characteristics of conductors, insulators and semiconductors	1	a4	b5		
3,4	PN junction diodes	1	a4	b5	c3	d7
5,6	Diode circuits applications.	1	a8	b6	c3	d7
7	Half wave and Full wave rectifiers	1	a4, a8	b5, b6	c3	
8	Mid-term		a8	b5		
9	Special diodes.	1	a8	b6		d7
10	Rectifiers and peak detectors.	1	a8	b6	c3	d7
11	Bipolar junction transistors (BJT)	1	a4,a8	b5, b6	c3	
12,13	BJT common modes	1	a4,a8	b5, b6	c3	d7
14	Oral exam		a4,a8	b5, b6	c3	d7
15	Final exam		a4,a8	b5, b6		

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Head of Department: Prof. Dr. Mohamed Elsaid

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