Menoufiya University
Faculty of Computers and Information
Department of Computer Science

جامعة المنوفية
كلية الحاسبات والمعلومات
قسم علوم الحاسب

COURSE SPECIFICATION

(PHYSICS)

Programme(s) on which the course is given   CS, IT, IS and OR

Major or Minor element of programs   Major

Department offering the program   Computer Science

Department offering the course   Information Technology

Academic year / Level   1st Year / 2st Semester

9/5/2007

A- Basic Information

Title	Physics			Code	PH111	
Credit Hours	**Lecture**	3	**Tutorial**	1	**Practical**	2
	Total				6	

B- Professional Information

1- Overall aims of course

- Understand the electronic properties of semiconductors and other materials used in optoelectronic devices.
- Give a first acquaintance with the analysis and design of active electronic circuits.
- Illustrate the importance of power electronic devices in electrical systems by studying their characteristics, operation and application.
- Explain the single and simple multistage linear circuits using bipolar transistors.

2- Intended learning outcomes of course (ILOs)

a- Knowledge and understanding

a3   Demonstrate a grasp of the principles of computer systems, including architecture, networks and communication

b- Intellectual skills

b4 Solve computer science problems with pressing commercial or industrial constraints.

c- Professional and practical skills

d- General and transferable skills

3- Contents

	Topic	No. of Hours	Lecture	Tutorial/ Practical
1	**Introduction**	6	3	3
2	**Diode Circuits** • Characteristics of Germanium – and Silicon Diodes • Peak and Average Values Rectification • Amplitude Limiting with Zener diodes • Variable peak Limiting (Clipping) with Diodes • Voltage Doubling Connections • Voltage Multiplier Connections according to Greinacher	12	6	6
3	**Zener Diode** • Characteristics of Zener-Diodes • Voltage Stabilization With Zener-Diodes	6	3	3
4	**Bipolar Transistors** • Bipolar Junction Transistors • Output Characteristics of Transistors • AF Amplifier in Emitter circuits	6	3	3
5	**Large-Signal Analysis of Bipolar Transistor Circuits** • Voltage Stabilizing With Series Pass Transistor I • Differential Amplifier	6	3	3
6	**Multivibrator** • A stable Multivibrator • Bistable Multivbrator	6	3	3
7	**Wien Bridge** • Wien Bridge • Sine-Oscillator With Wine Bridge • Colpitts Oscillator	6	3	3
8	**Photo Transistor** • Characteristics of LDR • Photo Transistor	6	3	3
9	**Field Effect Transistor Amplifier**	12	6	6

Circuits • Control Characteristic Of FETS • Output Characteristics Of FETS • Source Basic Circuit LH 11.2 • Monostable Multivibrator With FET			
10 Logic Electronic Devices • MOSFETs • Enhancement	6	3	3
11 Electronic Devices for AC/DC control systems • Operational Behavior Of Thyristors • Thyristor In A Dc-Circuit • Sawtooth Generator With UJT • Operational Behavior Of Triacs • Phase-Angle Control with UJT and Triac	12	6	6
Total number of Hours for the course	**84**	**42**	**42**

4- Teaching and learning methods

4.1 Lectures

4.2 Practical experiments in the laboratory.

4.3 Exercises and tutorials.

4.4 Research assignments.

5- Student assessment methods

5-a Methods

5.a.1 Reports, assignments, and exercises to assess knowledge and understanding.

5.a.2 Regular oral, practical and written quizzes to assess intellectual skills.

5.a.3 Practical projects, final practical and oral exams to assess professional skills.

5.a.4 Reports, assignments, and discussions to assess general and transferable skills.

5.a.5 Final written exam to assess knowledge and understanding.

5-b Assessment schedule

Assessment 1	5th week.	Mid term exam
Assessment 2	8th week.	
Assessment 3	10th week.	
Assessment 4	16th week (Oral and practical)	
Assessment 5	17th -18th weeks (final written exam)	

5-c Weighting of assessments

Semester work	10%
Mid-term examination	10%
Oral / Practical examination.	20%
Final-term examination	60%
Total	100%

6- List of references

6-a Course notes

There are lectures notes prepared in the form of a book authorized by the department

6-b Essential books (text books)

None

6-c Recommended books

[1] A book prepared and edited by the lecturer, and approved by the department council

6-d Periodicals, Web sites, ….. etc

IEEE transactions

7- Facilities required for teaching and learning

- Electronics laboratory.
- Software programs specified in physics.
- Datashow, screen, and laptop computer.

Course coordinator:

Dr. kamel Ali Arram

Head of Department:

Prof. Mohiy M. Hadhoud

Date: / /