COURSE SYLLABUS

EPE 170: Electronics

Course Title: Electronics **Code**: EPE 170
Lecture: 4 **Tutorial**: 2 **Practical**: **Total: 6**
Program on which the course is given: B.Sc. Electrical Engineering (Electrical Power and Machines)
Department offering the course: Electrical Engineering Department
Academic year / level: **First** Year / **Second** Semester

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Teaching Assistant
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Overall aims of course:

By the end of the course the students will be able to:

- Recognize the atomic structure of semiconductor material
- Explain the behaviour of pn junction and special diodes and analyze its operation as circuit element
- Explain the behaviour of BJT, FETs, MOSFETs, SCRs and analyze its operation as circuit element

Contents

Week No.	Topic
1	Atomic structure of Semiconductor Material
2	Standard diodes behavior and applications
3	Standard diodes behavior and applications
4	Special purpose diodes
5	Bipolar junction transistor and transistor bias circuits
6	Bipolar junction transistor and transistor bias circuits
6	Small signal bipolar amplifier
7	Small signal bipolar amplifier
8	Midterm Exam
9	Field effect transistor and bias circuit.
10	Metal Oxide Field Effect transistor and bias circuit.
11	Small signal FET amplifier
12	Thyristor and other devices
13	Thyristor and other devices
14	Revision
15	Final Exam

Teaching and Learning Methods

Modified Lectures

Classroom activity

Assignments/homework

Student Assessment Methods

Assignments to assess knowledge and intellectual skills

Quiz/Reports to assess knowledge, intellectual and professional and practical skills

Mid-term exam to assess knowledge, intellectual skills and professional and practical skills

Final exam to assess knowledge, intellectual skills and professional and practical skills

Weighting of Assessments

Mid-term examination	20%
Practical Project	6.67%
Quizzes	6.67%
Final-term examination	66.67%
Total	100%

List of References

Essential books

- Thomas L. Floyd, *Electronic Devices, Conventional Current Version*, ISBN-13: 978-0-13-254986-8, 2012

Recommended books

- Adel S. Sedra, Kenneth Carless Smith,"Microelectronic Circuits",Oxford University Press, Incorporated, 2010