**بسم الله الرحمن الرحيم**

**University: Diyala University**

**College: College of Engineering**

**Department:Electronic Engineering**

**Stage:Second**

**Lecturer name**

**Qualification: Ph.D.**

**Place of work: Electronic Dept.**

**Republic of Iraq**

**The Ministry Of Higher Education**

**& Scientific Research**



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| --- | --- | --- | --- | --- |
| Course Instructor | **Rokan Ali Ahmed** | | | |
| E-mail | **Rokan\_L4@yahoo.com** | | | |
| Title | **Analogue Electronics I** | | | |
| Course Coordinator |  | | | |
| Course Objective | The objective of this subject is to make the students ready to understand and comprehend the scientific theories and their applications related to design simple analog circuits to achieve specified performance levels. | | | |
| Course Description | Physical electronics underlying the operation of electronic devices. Diodes, diode models, and diode circuits are discussed. Transistors(BJT and FET) , transistor construction , and transistor circuits are included with DC, and small signal analysis of transistor amplifiers. Compound transistor configurations. Other essential parts of analog electronics circuit design such as basic tuned amplifier and introduction to four layer device will complete the course . | | | |
| Textbook | Electronic Devices and Circuit Theory by Robert Boylestad and Louis Nashelsky | | | |
| Course Assessments | First semester | Second semester | Lab. | Final Exam |
| **20 %** | **20 %** | **10%** | **50 %** |
| General Notes | Type here general notes regarding the course | | | |

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**Course Weekly Outline**

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| --- | --- | --- | --- | --- |
| Week | Date | Topics Covered | Lab. Experiment Assignments | Notes |
| 1 | 27/9/ | Bipolar Junction Transistors  (BJT) |  |  |
| 2 | 4/10/ | Construction and operation |  |  |
| 3 | 11/10/ | Configurations and  Characteristics |  |  |
| 4 | 18/10/ | Operating regions and load–  lines |  |  |
| 5 | 24/10/ | DC Biasing Circuits and  Stability |  |  |
| 6 | 1/11/ | DC Biasing Circuits and  Stability |  |  |
| 7 | 8/11/ | DC Biasing Circuits and  Stability |  |  |
| 8 | 15/11/ | DC Biasing Circuits and  Stability |  |  |
| 9 | 22/11/ | Power Dissipation, and  switching transistors |  |  |
| 10 | 29/11/ | Power Dissipation, and  switching transistors |  |  |
| 11 | 6/12/ | Transistor Equivalent  Circuits |  |  |
| 12 | 12/12/ | Transistor Equivalent  Circuits |  |  |
| 13 | 20/12/ | Voltage gain, current gain,  input and output  Impedance |  |  |
| 14 | 27/12/ | Analysis of CE, CB and  CC configurations.. |  |  |
| 15 | 3/1/ | Analysis of CE, CB and  CC configurations. |  |  |
| 16 | 10/1/ | Analysis of CE, CB and  CC configurations. |  |  |
| Mid Year Holiday | | | | |
| 1 | 21/2/ | Construction and  characteristics of JFET |  |  |
| 2 | 28/2/ | MOSFET construction and  characteristics, CMOS |  |  |
| 3 | 6/3/ | DC Biasing Circuits |  |  |
| 4 | 13/3/ | DC Biasing Circuits |  |  |
| 5 | 20/3/ | Amplifier JFET / MOSFET |  |  |
| 6 | 27/3/ | Small Signal Model  Analysis |  |  |
| 7 | 3/4/ | Analysis of CS, CG and  CD configurations |  |  |
| 8 | 10/4/ | Analysis of CS, CG and  CD configurations |  |  |
| 9 | 17/4/ | Analysis of CS, CG and  CD configurations |  |  |
| 10 | 24/4/ | Analysis of CS, CG and  CD configurations |  |  |
| 11 | 1/5/ | Types of multistage  amplifier |  |  |
| 12 | 8/5/ | Cascade and cascode  amplifier's, Darlington  amplifier |  |  |
| 13 | 15/5/ | Transformer-coupled  Amplifiers |  |  |
| 14 | 22/5/ | single tuned amplifiers,  tapped and double-tuned  amplifiers |  |  |
| 15 | 29/5/ | Description and operation  of silicon controlled  rectifier |  |  |
| 16 | 2/6/ | DIAC, thyristor, GTO, and  TRIAC |  |  |

**INSTRUCTOR Signature: Dean Signature:**