

SEMESTER	DEPARTMENT	COURSE TITLE
<i>Fourth</i>	<i>General Engineering</i>	<i>Analog Electronics II</i>
COURSE CODE	HOURS: 3	COURSE SPECIFICATIONS
<i>ET402</i>	<i>UNITS: 3</i>	<i>Theoretical Contents</i>
<p>1. Multistage Amplifiers:</p> <ul style="list-style-type: none"> ➤ Advantages of multistage amplifiers. ➤ Two-stage amplifiers with direct coupling. ➤ Two stage amplifiers with capacitive coupling. ➤ Two stage amplifiers with transformer coupling. 		
<p>2. Frequency Response of Amplifiers:</p> <ul style="list-style-type: none"> ➤ Low frequency and high frequency response of BJT and FET. ➤ Gain-Bandwidth product, input and output impedances. 		
<p>3. Power Amplifiers:</p> <ul style="list-style-type: none"> ➤ The role of power amplifier and its function. ➤ Classes of power amplifiers. ➤ Class-B push-pull amplifiers. ➤ Class-B complementary push-pull amplifiers. ➤ Principles of class-C amplifier. ➤ Heat transfer considerations and heat sinks in power amplifiers. 		
<p>4. Difference Amplifier and Operational Amplifiers:</p> <ul style="list-style-type: none"> ➤ Operation of difference amplifier. ➤ The role of op-amps in modern electronics. ➤ The ideal operational amplifier. <ul style="list-style-type: none"> • The inverting amplifier. • The non-inverting amplifier. • Voltage follower. • The compensating resistor R_C. ➤ Voltage summation, subtraction, and scaling. ➤ Controlled voltage and current sources. 		

- Differentiator and an integrator amplifier.
- Rectifier circuits using operational amplifier.

References:

- 1- Ronald J. Tocci, *Fundamentals of Electronic Devices*, Charles E. Merrill Publishing.
- 2- Theodore F. Bogart, *Electronic Devices and Circuits*, Prentice-Hall.
- 3- Ralph J. Smith, *Circuits, Devices and Systems*, John Wiley.
- 4- Jacob Millman and Arvin Grabel, *Microelectronics*, McGraw Hill.
- 5- Micheal Jacob, *Applications and Design with Analog Integrated Circuits*, Prentice Hall.
- 6- أساسيات الالكترونيات، تأليف: أي إن لورج، تعريب معن محمد شاکر.
- 7- Paul B. Zbar, *Basic Electronics*, McGraw-Hill Book Company.
- 8- Paul B. Zbar, *Industrial Electronics; A Text-Lab Manual*, McGraw-Hill book company
- 9- Horwitz and Robinson, *Laboratory Manual for the Art of Electronics*, Cambridge University Press.
- 10- Phillip Cutler, *Linear Electronic Circuits with Illustrative Problems*, McGraw-Hill Inc.