

2013 Scanning Sheet. Assignment Description: \_\_\_\_\_ Instructor: \_\_\_\_\_ Date: \_\_\_\_\_ Scanned File Name: \_\_\_\_\_

ABET Outcome											Rubric or student %	Example problem	Outcome #	EET 456 Communication I (4) – Outcomes Revised 2016
A	B	C	D	E	F	G	H	I	J	K				
1	1	1	1		1								1	Relate signal voltage and power levels to decibel equivalents.
	2	1	1	1		1							2	Calculate output signal-to-noise ratio of an amplifier given the input signal-to-noise ratio equal and noise figure.
	2	2	2	2	2	2							3	Design, fabricate and measure the performance of an antenna.
1	1	2	1	1	1								4	Determine the spectra of a square wave using the Fourier Transform and observe the spectra.
	2	1	1	1		1							5	Describe the typical frequencies of operation of communication equipments and the bandwidth requirement of applications such as telephone, TV, broadcast radio, internet, etc.
	2	1	1	1		1							6	Draw signal waveforms and frequency spectra in the stages of circuit stages in AM transmitters and receivers.
	2	1	1	1		1							7	Describe frequency spectra in circuit stages of a superhetrodyne receiver.
	2	1	1	1		1							8	Describe frequency spectra in circuit stages of FM transmitters and receivers.
	2	1	1	1		1							9	Estimate the sizes of antennas used for HF, VHF, UHF, and microwave.
1	1	1	1	1		1							10	Use a simulation tool to observe antenna radiation pattern vs. changes in antenna design.
	2	1	2	1	1	1							11	Measure microwave antenna performance in an anechoic chamber.
1	1	1	1	1		1							12	Calculate the sensitivity of a receiver given the NF, bandwidth and desired S/N.
	2	1	1	1		1							13	Calculate the dynamic range of a receiver given the 3rd order intercept is power level and the receiver sensitivity.
	2	1	1	1		1							14	Find the 1 –dB compression point of a receiver given the relationship between output signal level and input signal level.
	2	1	1	1		1							15	Determine the image frequency given the carrier frequency input to a mixer in a superhetrodyne receiver and the frequency of the local oscillator.
	2	1	1	1		1							16	Determine the selectivity of an AM receiver given the tuned-circuit bandwidth and input frequency.
	2	1	1	1		1							17	Determine the bandwidth required to transmit an FM signal by using the Bessel function table.
	2	1	1	1		1							18	Use the Bessel function table to determine the power in the sidebands.
	2	1	1	1		1							19	Determine the deviation constant of an FM transmitter given the characteristics of the intelligence signal and carrier.
	2	1	2	1	1	1							20	Determine the power levels of carrier and sideband outputs of AM and FM transmitters.
	2	2				1							21	Use available circuit simulation software to simulate amplitude modulation and demodulation behavior.

1=supporting contribution

2=significant contribution

<p>Rubric</p> <p>5: Excellent Mastery of Outcome By Vast Majority of Students</p> <p>4: Good Mastery of Outcome By Vast Majority of Students</p> <p>3: Adequate Mastery of Outcome By Majority of Students</p> <p>2: Marginal Mastery of Outcome By Most Students</p> <p>1: Lack of Mastery of Concept By Most Students</p>	a.	an ability to select and apply the knowledge, techniques, skills, and modern tools of the discipline to broadly defined engineering technology activities	
	b.	an ability to select and apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require the application of principles and applied procedures or methodologies	
	c.	an ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes	
	d.	an ability to design systems, components, or processes for broadly-defined engineering technology problems appropriate to program educational objectives	
	e.	an ability to function effectively as a member or leader on a technical team	
	f.	an ability to identify, analyze, and solve broadly-defined engineering technology problems	
	g.	an ability to apply written, oral, and graphical communication in both technical and non-technical environments; and an ability to identify and use appropriate technical literature	
	h.	an understanding of the need for and an ability to engage in self-directed continuing professional development	
	i.	an understanding of and a commitment to address professional and ethical responsibilities including a respect for diversity	
	j.	a knowledge of the impact of engineering technology solutions in a societal and global context; and	
	k.	a commitment to quality, timeliness, and continuous improvement.	
	Improvement Suggestions or Comments:		