

**The University of Texas at Tyler
Department of Electrical Engineering**

**EENG 3301 Electrical Engineering Circuits, Systems, and Applications
(Required for Mechanical Engineering Majors)**

Syllabus

Course Description:	The fundamentals of electrical and electronic components and circuits, circuit analysis, electric motors and generators, fundamentals of electric power systems. Three hours of lecture per week. (Not for electrical engineering majors)	
Course credit:	3 hours	
Class Meeting Days and Location:	MW 3:30PM-4:50PM RBN 3039	
Instructor(s):	Course coordinator	
	Dr. Yasser Mahgoub, Electrical Engineering E-mail: YMahgoub@uttyler.edu Website: http://www.uttyler.edu/ee Office hours: by appointment Preferred method of contact: e-mail	
Required Materials	Allan R. Hambley, Electrical Engineering Principles and Applications, 6th Edition, Pearson, 2013.	
Recommended Materials:	None	
Course Student Learning Objectives (SLOs)	<ol style="list-style-type: none"> 1. Analyze AC and DC circuits of moderate complexity 2. Attain basic understanding of power electronics circuits and applications 3. Attain basic understanding of operational amplifier 4. Analyze basic operational amplifier circuits 5. Apply frequency domain techniques to circuit analysis 6. Attain basic understanding of electric machines and their applications 7. Attain basic understanding of electric power systems 	
Course Schedule/ Content	WEEK	TOPICS COVERED
	1	Fundamentals of Electric Circuits
	2	Fundamentals of Electric Circuits
	3	Fundamentals of Electric Circuits
	4	Network Analysis
	5	Network Analysis
	6	Frequency Response
	7	Frequency Response
	8	MIDTERM EXAM
	9	Operational Amplifiers
	10	Operational Amplifiers
	11	Electrical Machines
	12	Electrical Machines
	13	Fundamentals of Electric Power Systems
	14	Fundamentals of Electric Power Systems

	15	FINAL EXAM								
Class Withdrawal	<p>The withdrawal policy outlined by the Registrar will be strictly followed. The policy may be found at the following website: http://www.uttyler.edu/registrar/registration/withdrawals.php The last day to withdraw from courses without penalty is the census date.</p>									
Grading Policy and Criteria to Determine Final Grade	<p>Homework and project reports will be due in class or lab one week after assignment. Project reports should be written as per the guidelines provided in class. A 25% penalty will be assessed per week for late project reports and homework.</p> <p>Grades will be assigned based on the total score as per the distribution below and the following scale out of a 100 total:</p> <p style="text-align: center;">A: >90, B: >80, C: >70, D: >60, F: <60</p> <p>Any deviation from the above policy such as scaling or curving to calculate the individual item or final scores will be at the sole discretion of the instructor and performed by the instructor uniformly for all students in the class section.</p>									
Examination and/or Major Assessment Policies and Procedures	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding-left: 40px;">Quizzes</td> <td style="text-align: right;">30%</td> </tr> <tr> <td style="padding-left: 40px;">Mid-Term Examination</td> <td style="text-align: right;">25%</td> </tr> <tr> <td style="padding-left: 40px;">Homework</td> <td style="text-align: right;">20%</td> </tr> <tr> <td style="padding-left: 40px;">Final Examination</td> <td style="text-align: right;">25%</td> </tr> </table>		Quizzes	30%	Mid-Term Examination	25%	Homework	20%	Final Examination	25%
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Attendance and Make-up Policy	<p>The progressive nature of the class means that perfect attendance is recommended if a good grade is desired. Makeup quizzes, exams or projects will only be provided for valid absences and at the sole discretion of the instructor.</p>									
UT Tyler Honor Code	<p>Every member of the UT Tyler community joins together to embrace: Honor and integrity that will not allow me to lie, cheat, or steal, nor to accept the actions of those who do.</p>									
Students' Rights and Responsibilities	<p>To know and understand the policies that affect your rights and responsibilities as a student at UT Tyler, please follow this link: http://www.uttyler.edu/wellness/rightsresponsibilities.php.</p> <p>Students are responsible for reviewing the syllabus and abiding by all that is within. Students are encouraged to seek clarification within the first week of the course.</p>									
Campus Carry	<p>We respect the right and privacy of students 21 and over who are duly licensed to carry concealed weapons in this class. License holders are expected to behave responsibly and keep a handgun secure and concealed. More information is available at http://www.uttyler.edu/about/campus-carry/index.php</p>									
UT Tyler a Tobacco-Free University	<p>All forms of tobacco will not be permitted on the UT Tyler main campus, branch campuses, and any property owned by UT Tyler. This applies to all members of the University community, including students, faculty, staff, University affiliates, contractors, and visitors. Forms of tobacco not permitted include cigarettes, cigars, pipes, water pipes (hookah), bidis, kreteks, electronic cigarettes, smokeless tobacco, snuff, chewing tobacco, and all other tobacco products. There are several cessation programs available to students looking to quit smoking, including counseling, quitlines, and group support. For more information on cessation programs please visit www.uttyler.edu/tobacco-free.</p>									

<p>Grade Replacement/Forgiveness and Census Date Policies</p>	<p>Students repeating a course for grade forgiveness (grade replacement) must file a Grade Replacement Contract with the Enrollment Services Center (ADM 230) on or before the Census Date of the semester in which the course will be repeated. (For Fall, the Census Date is Sept. 12.) Grade Replacement Contracts are available in the Enrollment Services Center or at http://www.uttyler.edu/registrar. Each semester's Census Date can be found on the Contract itself, on the Academic Calendar, or in the information pamphlets published each semester by the Office of the Registrar. Failure to file a Grade Replacement Contract will result in both the original and repeated grade being used to calculate your overall grade point average. Undergraduates are eligible to exercise grade replacement for only three course repeats during their career at UT Tyler; graduates are eligible for two grade replacements. Full policy details are printed on each Grade Replacement Contract. The Census Date (Sept. 12th) is the deadline for many forms and enrollment actions of which students need to be aware. These include:</p> <ul style="list-style-type: none"> • Submitting Grade Replacement Contracts, Transient Forms, requests to withhold directory information, approvals for taking courses as Audit, Pass/Fail or Credit/No Credit. • Receiving 100% refunds for partial withdrawals. (There is no refund for these after the Census Date) • Schedule adjustments (section changes, adding a new class, dropping without a "W" grade) • Being reinstated or re-enrolled in classes after being dropped for non-payment • Completing the process for tuition exemptions or waivers through Financial Aid
<p>State-Mandated Course Drop Policy</p>	<p>Texas law prohibits a student who began college for the first time in Fall 2007 or thereafter from dropping more than six courses during their entire undergraduate career. This includes courses dropped at another 2-year or 4-year Texas public college or university. For purposes of this rule, a dropped course is any course that is dropped after the census date (See Academic Calendar for the specific date).</p> <p>Exceptions to the 6-drop rule may be found in the catalog. Petitions for exemptions must be submitted to the Enrollment Services Center and must be accompanied by documentation of the extenuating circumstance. Please contact the Enrollment Services Center if you have any questions.</p>
<p>Student Accessibility and Resources</p>	<p>In accordance with Section 504 of the Rehabilitation Act, Americans with Disabilities Act (ADA) and the ADA Amendments Act (ADAAA) the University offers accommodations to students with learning, physical and/or psychiatric disabilities. If you have a disability, including non-visible disabilities such as chronic diseases, learning disabilities, head injury, PTSD or ADHD, or you have a history of modifications or accommodations in a previous educational environment you are encouraged to contact the Student Accessibility and Resources (SAR) office and schedule an interview with the Accessibility Case Manager/ADA Coordinator, Cynthia Lowery Staples. If you are unsure if the above criteria applies to you, but have questions or concerns please contact the SAR office. For more information or to set up an appointment please visit the SAR office located in the University Center, Room 3150 or call 903.566.7079. You may also send an email to cstaples@uttyler.edu.</p>

Student Absence due to Religious Observance	Students who anticipate being absent from class due to a religious observance are requested to inform the instructor of such absences by the second class meeting of the semester.
Student Absence for University-Sponsored Events and Activities	If you intend to be absent for a university-sponsored event or activity, you (or the event sponsor) must notify the instructor at least two weeks prior to the date of the planned absence. At that time the instructor will set a date and time when make-up assignments will be completed.
Social Security and FERPA Statement	It is the policy of The University of Texas at Tyler to protect the confidential nature of social security numbers. The University has changed its computer programming so that all students have an identification number. The electronic transmission of grades (e.g., via e-mail) risks violation of the Family Educational Rights and Privacy Act; grades will not be transmitted electronically.
Emergency Exits and Evacuation	Everyone is required to exit the building when a fire alarm goes off. Follow your instructor's directions regarding the appropriate exit. If you require assistance during an evacuation, inform your instructor in the first week of class. Do not re-enter the building unless given permission by University Police, Fire department, or Fire Prevention Services.
Student Standards of Academic Conduct	<p>Disciplinary proceedings may be initiated against any student who engages in scholastic dishonesty, including, but not limited to, cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts.</p> <p>i. "Cheating" includes, but is not limited to:</p> <ul style="list-style-type: none"> • copying from another student's test paper; • using, during a test, materials not authorized by the person giving the test; • failure to comply with instructions given by the person administering the test; • possession during a test of materials which are not authorized by the person giving the test, such as class notes or specifically designed "crib notes". The presence of textbooks constitutes a violation if they have been specifically prohibited by the person administering the test; • using, buying, stealing, transporting, or soliciting in whole or part the contents of an unadministered test, test key, homework solution, or computer program; • collaborating with or seeking aid from another student during a test or other assignment without authority; • discussing the contents of an examination with another student who will take the examination; • divulging the contents of an examination, for the purpose of preserving questions for use by another, when the instructors has designated that the examination is not to be removed from the examination room or not to be returned or to be kept by the student; • substituting for another person, or permitting another person to substitute for oneself to take a course, a test, or any course-related assignment; • paying or offering money or other valuable thing to, or coercing

	<p>another person to obtain an unadministered test, test key, homework solution, or computer program or information about an unadministered test, test key, home solution or computer program;</p> <ul style="list-style-type: none"> • falsifying research data, laboratory reports, and/or other academic work offered for credit; • taking, keeping, misplacing, or damaging the property of The University of Texas at Tyler, or of another, if the student knows or reasonably should know that an unfair academic advantage would be gained by such conduct; and • misrepresenting facts, including providing false grades or resumes, for the purpose of obtaining an academic or financial benefit or injuring another student academically or financially. <p>ii. “Plagiarism” includes, but is not limited to, the appropriation, buying, receiving as a gift, or obtaining by any means another’s work and the submission of it as one’s own academic work offered for credit.</p> <p>iii. “Collusion” includes, but is not limited to, the unauthorized collaboration with another person in preparing academic assignments offered for credit or collaboration with another person to commit a violation of any section of the rules on scholastic dishonesty.</p> <p>iv. All written work that is submitted will be subject to review by SafeAssign™, available on Blackboard</p>
<p>UT Tyler Resources for Students</p>	<ul style="list-style-type: none"> • UT Tyler Writing Center (903.565.5995), writingcenter@uttyler.edu • UT Tyler Tutoring Center (903.565.5964), tutoring@uttyler.edu • The Mathematics Learning Center, RBN 4021, this is the open access computer lab for math students, with tutors on duty to assist students who are enrolled in early-career courses. • UT Tyler Counseling Center (903.566.7254)
<p>Prerequisites</p>	<p>PHYS 2326 – University Physics II</p>

The University of Texas at Tyler
Department of Electrical Engineering

EENG 3301
Electrical Engineering Circuits, Systems, and Applications

Yasser Mahgoub
RBN 2013
ymahgoub@uttyler.edu

Time: 3:30 – 4:50 PM, MW

Place: RBN 3039

Text: Allan R. Hambley, *Electrical Engineering: Principles & Applications*, 7th Ed. Pearson, 2018.
ISBN-13 978-0134484143. Also usable is the 6th Edition, published 2014 (ISBN-13 978-0133116649)

Schedule:

Week	Topic	6 th Ed	7 th Ed
1	Fundamentals of Electric Circuits	1	1
2	Network Analysis	2	2
3	Network Analysis	2	2
4	Quiz 1		
5	Inductance and Capacitance	3	3
6	Transients	4	4
7	Steady-State Sinusoidal Analysis	5	5
8	Steady-State Sinusoidal Analysis	5	5
8	Midterm Exam		
9	Operational Amplifiers	14	13
10	DC Machines	16	15
11	AC Machines	17	16
12	Quiz 2		
13	Fundamentals of Electric Power Systems		
14	Review		
15	Final Exam		

Assessment:

Quizzes	20%
Mid-Term Exam	30%
Homework	10%
Final Exam	40%

Grading Scale:

Grades will be assigned based on the total score as per the distribution below and the following scale out of a 100 total:

A:	90% – 100%
B:	80% – 89%
C:	70% – 79%
D:	60% – 69%
F:	< 60%

Any deviation from the above policy such as scaling or curving to calculate the individual item or final scores will be at the sole discretion of the instructor and performed by the instructor uniformly for all students in the class section.

Attendance and Make-up Policy:

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Course communication:

Course communication will take place by e-mail and by announcements on UT-Tyler's Learning Management System (LMS). University policy requires that official e-mail communication be sent only to Patriot e-mail accounts.

Academic misconduct:

Academic misconduct that comes to light will be dealt through the formal discipline process. Examples of academic misconduct include (but are not limited to) submitting the work of others as one's own, copying from others during quizzes, and doing work intended to be submitted by another person.

General Policies of the University of Texas at Tyler

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Disability Services: In accordance with federal law, a student requesting accommodation must provide documentation of his/her disability to the Disability Services counselor. If you have a disability, including a learning disability, for which you request an accommodation, please contact the Disability Services office in UC 3150, or call (903) 566-7079.