American University of Ras Al Khaimah

AURAK Syllabus

Course Title: Electric Circuit Analysis I

Course Code: ECEN 280

Credit Hours: 3

Semester and Academic Year: Fall 2019

Prerequisite course(s) and/or co-requisite courses, if applicable: Pre-requisite PHYS 220 / ECEN 281.

Faculty Name: Dr. Maissa Farhat Maissa

Contact Information and Office Hours: Farhat@aurak.ac.ae, , office hours : UTR(from:11.0am to 12.0pm)

Course Description:
Basic circuit concepts and DC analysis, circuit analysis techniques, circuit theories, fundamental operation of operational amplifiers and their applications, transient and steady state analysis of RL, RC, and RLC circuits and basic AC analysis.

Course Textbooks and Materials:
Text
Book:

Basic circuit concepts and DC analysis, circuit analysis techniques, circuit theories, fundamental operation of operational amplifiers and their applications, transient and steady state analysis of RL, RC, and RLC circuits and basic AC analysis.

Web Resources:

Course Learning Outcomes (CLOs)

Course Learning Outcomes **At the end of this course, students should be able to:**	
CLO 1	Employ the basic electric circuit laws and theories in the analysis and the simulation of linear electric circuits and measurements of their properties.
CLO 2	Develop a clearer understanding of the properties of resistive and energy-storing elements, controlled sources, operational amplifiers and transformers.
CLO 3	Analyze first-order and second-order electric circuits.
CLO 4	Differentiate between the circuit behavior under transient conditions and its behavior under AC steady state conditions.

Assessment Activities

The dates for quizzes, exams, and submission of assignments are specified in the schedule. You will be graded in this class based on the number of points you earn for quizzes, exams written assignments, or other activities, including your class participation. Keep track of your scores in Blackboard.

Assessment Activities and Grading Weight	***(Sample)* Course Activities / Assignments X%**	***(Sample)* Quizzes X%**	***(Sample)* Mid-term Exam X%**	***(Sample)* (Other Activities, e.g., Class Participation, Portfolio, Presentations) X%**	***(Sample)* Final Exam X%**
CLO 1	20	30	20		30
CLO 2	20	30	20		30
CLO 3	20	30	20		30
CLO 4	20	30	20		30
CLO 5					

Mapping Course to Program Outcomes: (PO)

ABET Standards (1-7)	***Program Outcomes***	***Program Outcomes Addressed in Course***
1	An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.	x

2	An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.	
3	An ability to communicate effectively with a range of audiences.	
4	An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.	
5	An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.	
6	An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.	
7	An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.	

Grading Scale:

The grading system and scale for AURAK, as established by the Board of Trustees, is as follows:

AURAK Grading System and Scale		
Grade	**Percentage Scores**	**Grade Points**
A	**95-100**	**4**
A-	**90-94**	**3.7**
B+	**86-89**	**3.3**
B	**83-85**	**3**
B-	**80-82**	**2.7**
C+	**76-79**	**2.3**
C	**73-75**	**2**
C-	**70-72**	**1.7**
D+	**66-69**	**1.3**
D	**60-65**	**1**
F	**0-59**	**0**

Schedule of Course Topics, Required Reading, and Assignments and Assessments

Week	Topic	Required Readings	Assignment, Assessment (with grade weighting) & Due Date	Mapping of CLSLO's to Assessments
1	Basic Circuit Concepts	Chapter 1	QUIZ1	CSLO 1 CSLO 2
2	Basic Circuit Concepts	Chapter 1	QUIZ1	CSLO 1 CSLO 2
3	KCL,KVL, Series/Parallel Resistors	Chapter 2	QUIZ1	CSLO 1 CSLO 2
4	KCL,KVL, Series/Parallel Resistors	Chapter 2	QUIZ1	CSLO 1 CSLO 2
5	Nodal analysis, Mesh analysis Linearity, Superposition ,	Chapter 3	QUIZ1 HMW1	CSLO 1 CSLO 2
6	Thevenin and Norton equivalent circuits, Max Power	Chapter 4	HMW2	CSLO 1 CSLO 2
7	Op Amps	Chapter 5	QUIZ2	CSLO 1 CSLO 2
8	Revision Midterm Exam		MID	CSLO 1 CSLO 2
9	Capacitors, Inductors	Chapter 6	Quiz3	CSLO 1 CSLO 2
10	RL/RC step Response , RL/RC general Response	Chapter6	final	CSLO 3 CSLO 4
11	RL/RC source free circuits	Chapter 6	Quiz3	CSLO 3 CSLO 4

12	RLC source free circuits	Chapter 7	Quiz3	CSLO 3 CSLO 4
13	RLC step Response, RLC general Response	Chapter 7	Quiz3	CSLO 3 CSLO 4
14	General 2nd order circuits	Chapter 8	final	CSLO 3 CSLO 4
15	AC circuit concepts, Phasors, Impedance, AC Steady State Analysis	Chapter 9	final	CSLO 3 CSLO 4
16	Final exam SATURDAY 14 DECEMBER, 2019		final	

Attendance Policy

University policy is that students are to attend all classes and to arrive on time. Students are required to:

- Attend all learning and teaching sessions associated with their program of study.
- Notify their course instructors in advance (in person, by phone or e-mail) that they will be absent from time-tabled class sessions.
- Obtain prior permission from their instructor or course manager, for planned absences of two or more consecutive class sessions during the semester.
- Provide a medical certificate or other corroborating evidence to explain their absence, if required by the University.

Unsatisfactory student attendance includes failure to regularly attend learning and teaching sessions without providing a satisfactory reason to instructors for absence and/or persistent late arrival at, or early departure from, learning and teaching sessions. Where a student fails to attend classes for **four or more weeks cumulatively,** or where a recurring pattern of non-attendance is observed over the course of the semester, the instructor has the option of deeming that the student has failed the course, in which case that student may receive an "F (Fail)" or "U (Unsatisfactory)" grade, as appropriate. At this point, and at the instructor's recommendation, the dean also has the authority to instruct the registrar to remove or withdraw the student from the course.

Disability Accommodations

Students with disabilities may find they require additional support, services, or considerations. AURAK will endeavor to support students with disabilities or special needs where resources are available. Accommodations will be provided, for students with verified needs, allowing equal access to educational facilities, programs, services, and activities at AURAK. Disability Accommodations are never applied retroactively – only students who have previously requested and have been approved for supporting accommodations can have them apply to a given academic semester/course. Students needing support must make the request from the Department of Counseling, Testing, and Disability Services located in Building H.

Other Relevant Policies

A. **Academic Integrity**

The Honor Code

The American University of Ras Al Khaimah strongly supports the concept of academic integrity and expects students and all other members of the AURAK community to be honest in all academic endeavors. The AURAK Honor Code can be found in the AURAK Student Handbook.

The role of the Honor Code and associated Academic Integrity Policy is to protect the academic integrity of the university, encourage consistent ethical behavior among students, and foster a climate of honorable academic achievement. The Honor Code is an integral part of university life and students are responsible, therefore, for understanding and abiding by the code's provisions. While a student's commitment to honesty and personal integrity is assumed and expected, this Code and associated policy and procedures provides clarity of expectations.

Expectations

Cheating, plagiarism, and all other forms of academic fraud are unacceptable; they are serious violations of university policy. AURAK expects all students to be familiar with university policies on academic integrity. The university will not accept a claim of ignorance – either of the policy itself or of what constitutes academic fraud – as a valid defense against such a charge.

Violations of Academic Integrity

Violations of academic integrity constitute academic fraud. Academic fraud consists of any actions that serves to undermine the integrity of the academic process or that gives the student an unfair advantage, including:

- Inspecting, duplicating or distributing test materials without authorization.
- Cheating, attempting to cheat, or assisting others to cheat – relevant here is the prohibition on being in possession of a mobile telephone or similar electronic device during a test or examination. In case such devices are found with a student, the student

will be deemed to have attempted to cheat and will be subject to disciplinary action under the Student Academic Integrity Policy.
- Altering work after it has been submitted for a grade.
- Plagiarizing.
- Using or attempting to use anything that constitutes unauthorized assistance.
- Fabricating, falsifying, distorting, or inventing any information, documentation, or citation.

Plagiarism

One of the most common violations of academic integrity is plagiarism. Plagiarism can be intentional or unintentional. However, since each student is responsible for knowing what constitutes plagiarism, unintentional plagiarism is as unacceptable as intentional plagiarism and thus will bring the same penalties.

Plagiarism – submitting the work of others as one's own - is a serious offense. In the academic world, plagiarism is theft. Information from sources – whether quoted, paraphrased, or summarized – must be given credit through specific citations. When a student paraphrases a work, it is still necessary to cite the original source. Merely rearranging a sentence or changing a few words is not sufficient. The citation style should be appropriate for the discipline and should clearly indicate the beginning and ending of the referenced material. All sources used in the preparation of an academic paper must also be listed with full bibliographic details at the end of the paper, as appropriate in the discipline.

Faculty and Student Expectations

- Every student, faculty member, and administrator is responsible for upholding the highest standards of academic integrity. Every member of the AURAK community shall honor the spirit of this policy by refusing to tolerate academic fraud.
- It is the responsibility of the instructor to provide students with additional guidelines for what constitutes "authorized" and "unauthorized" assistance.
- It is the responsibility of every student to see clarification if in doubt about what constitutes 'authorized" and "unauthorized" assistance. In cases involving collaborative work, all students within the collaborative group may be help responsible for violating the code if any member of the group receives, accepts, or utilizes "unauthorized" assistance.
- Students are required to obtain permission prior to submitting work, any part of which was previously or will be submitted in another course. The instructor has the option of accepting, rejecting, or requiring modification of the content of previously or simultaneously submitted work.

A student who suspects that a violation of academic integrity has occurred should report the violation to the dean or to the Office of the Provost. In this report, the student should describe any action taken, such as talking with the person involved or with a faculty or staff member. Every effort will be made to preserve the anonymity of the student reporting the incident;

Possible penalties for academic fraud include: Formal warning, Reduction in grade for the assignment, Reduction in the grade for the course, A failing grade for the assignment, A failing grade (F) in the course, and/or Dismissal or Expulsion from the University.

Please refer to the relevant section in the *Student Handbook* and ensure a clear understanding of the provisions of the University Honor Code and the Student Academic Integrity Policy.

B. **Concerns about Grades or Other Course Matters**

Students are responsible for their learning experiences. If you are concerned about a class matter, first discuss it with the instructor. If the matter is not resolved, the next step is to meet with the Chair of the department in which the course is taught. If you still have a concern, meet with the Dean of the school in which the course is taught. The matter is likely to be resolved before it reaches that point, but if it is not, then visit the Associate Provost for Academic and Student Affairs. Students who decide to "jump to the top" will be referred "back" to the appropriate next step.

C. **Assignments**

University policy is that assignments are due on the date assigned. Instructors may refuse to accept late assignments or lower the grade that would be otherwise given.

D. **Mobile Phones**

All mobile phones, pagers and/or other communication devices should be turned off before entering the classroom. Students may NOT have mobile telephone or other electronic devices in their possession while completing examinations. Any violation will be deemed as having attempted to cheat.

E. **Diversity and the Use of English**

English is the common language of the AURAK campus for everyone. It is the only language to be used in the classroom. AURAK brings together students and faculty from diverse cultural and linguistic backgrounds, which is one of the strengths of the university. This diversity provides an opportunity to share our different experiences and enlarge our understanding of the world.