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SEP 19 2014

OFFICE OF THE
SENATE COUNCIL**Course Information**

Date Submitted: 11/18/2013

Current Prefix and Number: EE - Electrical Engineering , EE 305 ELECT CIRCUITS/ELECTRON

Other Course:

Proposed Prefix and Number: EE 305

What type of change is being proposed?

Major – Add Distance Learning

Should this course be a UK Core Course? No

1. General Information

a. Submitted by the College of: ENGINEERING

b. Department/Division: Electrical and Computer Engineering

c. Is there a change in 'ownership' of the course? No

If YES, what college/department will offer the course instead: Select...

e. Contact Person

Name: Regina Hannemann

Email: Regina.Hannemann@uky.edu

Phone: 7-5156

Responsible Faculty ID (if different from Contact)

Name:

Email:

Phone:

f. Requested Effective Date

Semester Following Approval: Yes OR Effective Semester:

2. Designation and Description of Proposed Course

a. Current Distance Learning (DL) Status: Please Add

b. Full Title: ELECTRICAL CIRCUITS AND ELECTRONICS

Proposed Title: ELECTRICAL CIRCUITS AND ELECTRONICS

c. Current Transcript Title: ELECT CIRCUITS/ELECTRON

Proposed Transcript Title:

d. Current Cross-listing: none

Proposed – ADD Cross-listing :

Proposed – REMOVE Cross-listing:

e. Current Meeting Patterns

LECTURE: 3

Proposed Meeting Patterns

LECTURE: 3

f. Current Grading System: ABC Letter Grade Scale

Proposed Grading System: *Letter (A, B, C, etc.)*

g. Current number of credit hours: 3

Proposed number of credit hours: 3

h. Currently, is this course repeatable for additional credit? No

Proposed to be repeatable for additional credit? No

If Yes: Maximum number of credit hours:

If Yes: Will this course allow multiple registrations during the same semester? No

2i. Current Course Description for Bulletin: A service course covering electrical engineering principles for engineering or science students with majors outside of electrical engineering. Topics include: circuits analysis, power, electronics, digital logic and instrumentation.

Proposed Course Description for Bulletin: A service course covering electrical engineering principles for engineering or science students with majors outside of electrical engineering. Topics include: AC and DC circuits analysis.

2j. Current Prerequisites, if any: Prereq: MA 114, PHY 232.

Proposed Prerequisites, if any: Prereq: MA 114, PHY 232.

2k. Current Supplementary Teaching Component:

Proposed Supplementary Teaching Component:

3. Currently, is this course taught off campus? No

Proposed to be taught off campus? No

If YES, enter the off campus address:

4. Are significant changes in content/student learning outcomes of the course being proposed? Yes

If YES, explain and offer brief rationale: The current EE 305 class has a wide variety of outcomes. For electrical engineers these topics are covered (in more depth but still) in at least four different classes (EE211, EE221, EE280, EE416). For the instructor it is almost impossible to cover all the topics needed to satisfy the outcomes in the time given in one semester, regardless of the fact that students are not able to grasp all the concepts presented to them in such a hurry. While I am working on developing an online version for EE 305 I would like to change the outcomes for EE 305 in its current version as well, so that both classes (online and the traditional classroom version) have the same set of outcomes.

5a. Are there other depts. and/or pgms that could be affected by the proposed change? Yes

If YES, identify the depts. and/or pgms: Mechanical Engineering Biosystems Engineering Materials Engineering Mining Engineering

5b. Will modifying this course result in a new requirement of ANY program? No

If YES, list the program(s) here:

6. Check box if changed to 400G or 500: No

Distance Learning Form

Instructor Name: Regina Hannemann

Instructor Email: Regina.Hannemann@uky.edu

Internet/Web-based: Yes

Interactive Video: No

Hybrid: No

1. How does this course provide for timely and appropriate interaction between students and faculty and among students? Does the course syllabus conform to University Senate Syllabus Guidelines, specifically the Distance Learning Considerations? Communication: Communication between instructor and student will be via email or virtual office meetings (by arrangement or during regularly scheduled office hours).

2. How do you ensure that the experience for a DL student is comparable to that of a classroom-based student's experience? Aspects to explore: textbooks, course goals, assessment of student learning outcomes, etc. Students in the online course will have to watch videos in which the content is delivered that would normally be in a lecture setting. They will have ample examples and problems to solve for themselves. They will get help from the instructor and/or TAs and are also required to discuss some of their experiences/problems online.

3. How is the integrity of student work ensured? Please speak to aspects such as password-protected course portals, proctors for exams at interactive video sites; academic offense policy; etc. The online version will use Blackboard as the main communication tool. This has been used for parts of the face-to-face class as well and has been proven to be a safe tool while relying on the honor system of not sharing passwords with other people. Exams are considered to be taken at a proctored site.

4. Will offering this course via DL result in at least 25% or at least 50% (based on total credit hours required for completion) of a degree program being offered via any form of DL, as defined above? no

If yes, which percentage, and which program(s)? NA

5. How are students taking the course via DL assured of equivalent access to student services, similar to that of a student taking the class in a traditional classroom setting? The students have access to the instructor during office hours in the same way as traditional students. They can email or call with questions and will receive answers in a timely manner. This is how email questions from traditional students are handled right now. The students have access to all material through Blackboard as the current traditional students too. Technical help will be provided through the UK helpdesk.

6. How do course requirements ensure that students make appropriate use of learning resources? As in the traditional course there will be weekly homework and quizzes assigned. There will also be a discussion forum where students have to interact with each other and are required to post comments twice a week.

7. Please explain specifically how access is provided to laboratories, facilities, and equipment appropriate to the course or program. This class does not need any laboratories, facilities or special equipment. A laptop with a webcam and microphone and internet access is all that is needed.

8. How are students informed of procedures for resolving technical complaints? Does the syllabus list the entities available to offer technical help with the delivery and/or receipt of the course, such as the Information Technology Customer Service Center (<http://www.uky.edu/UKIT/>)? Excerpt from the syllabus: Technical Support: Students experiencing difficulty with delivery of the course material should contact the instructor or the UK help desk at 859-218-HELP (4357) or at helpdesk@uky.edu

9. Will the course be delivered via services available through the Distance Learning Program (DLP) and the Academic Technology Group (ATL)? YES

If no, explain how student enrolled in DL courses are able to use the technology employed, as well as how students will be provided with assistance in using said technology. NA

10. Does the syllabus contain all the required components? YES

11. I, the instructor of record, have read and understood all of the university-level statements regarding DL.

Instructor Name: Regina Hannemann

SIGNATURE|HOLLOWAY|Lawrence E Holloway|EE 305 CHANGE Dept Review|20131122

SIGNATURE|CHE202|Kimberly W Anderson|EE 305 CHANGE College Review|20140213

SIGNATURE|JMETT2|Joanie Ett-Mims|EE 305 CHANGE Undergrad Council Review|20140919

Courses	Request Tracking
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Course Change Form

https://myuk.uky.edu/sap/bc/soap/rfc?services=

Open in full window to print or save

Attachments:

Browse: No file selected.

ID	Attachment
Delete 3617	face_to_face_syllabus_Revised.pdf
Delete 3618	online_syllabus_Revised.pdf

First 1 Last

Select saved project to retrieve...

NOTE: Start form entry by choosing the Current Prefix and Number (*denotes required fields)

Current Prefix and Number:		EE - Electrical Engineering EE 305 ELECT CIRCUITS/ELECTRON	Proposed Prefix & Number: (example: PHY 401G) <input type="checkbox"/> Check if same as current	EE 305
* What type of change is being proposed?		<input type="checkbox"/> Major Change <input checked="" type="checkbox"/> Major - Add Distance Learning <input type="checkbox"/> Minor - change in number within the same hundred series, exception 600-799 is the same "hundred series" <input type="checkbox"/> Minor - editorial change in course title or description which does not imply change in content or emphasis <input type="checkbox"/> Minor - a change in prerequisite(s) which does not imply a change in course content or emphasis, or which is made necessary by the elimination or significant alteration of the prerequisite(s) <input type="checkbox"/> Minor - a cross listing of a course as described above		
Should this course be a UK Core Course? <input type="radio"/> Yes <input checked="" type="radio"/> No If YES, check the areas that apply:				
<input type="checkbox"/> Inquiry - Arts & Creativity <input type="checkbox"/> Composition & Communications - II <input type="checkbox"/> Inquiry - Humanities <input type="checkbox"/> Quantitative Foundations <input type="checkbox"/> Inquiry - Nat/Math/Phys Sci <input type="checkbox"/> Statistical Inferential Reasoning <input type="checkbox"/> Inquiry - Social Sciences <input checked="" type="checkbox"/> U.S. Citizenship, Community, Diversity <input type="checkbox"/> Composition & Communications - I <input type="checkbox"/> Global Dynamics				
1. General Information				
a. Submitted by the College of:		ENGINEERING	Submission Date: 11/18/2013	
b. Department/Division:		Electrical and Computer Engineering		
c.* Is there a change in "ownership" of the course? <input type="radio"/> Yes <input checked="" type="radio"/> No If YES, what college/department will offer the course instead? Select...				
e.*		* Contact Person Name: Regina Hannemann Email: Regina.Hannemann@uky	Phone: 7-5156	
		* Responsible Faculty ID (if different from Contact)	Phone:	
f.* Requested Effective Date:		<input checked="" type="checkbox"/> Semester Following Approval	OR	Specific Term: ²
2. Designation and Description of Proposed Course.				
a. Current Distance Learning(DL) Status:		<input type="radio"/> N/A <input type="radio"/> Already approved for DL* <input checked="" type="radio"/> Please Add <input type="radio"/> Please Drop		
*If already approved for DL, the Distance Learning Form must also be submitted <u>unless</u> the department affirms (by checking this box) that the proposed changes do not affect DL delivery.				
b. Full Title:		ELECTRICAL CIRCUITS AND ELECTRONICS	Proposed Title: *	ELECTRICAL CIRCUITS AND ELECTRONICS
c. Current Transcript Title (if full title is more than 40 characters):		ELECT CIRCUITS/ELECTRON		
c. Proposed Transcript Title (if full title is more than 40 characters):				
d. Current Cross-listing:		<input type="checkbox"/> N/A	OR	Currently ² Cross-listed with (Prefix & Number): none
Proposed - ADD ³ Cross-listing (Prefix & Number):				

Proposed - REMOVE ^{3,4} Cross-listing (Prefix & Number):					
e. Courses must be described by at least one of the meeting patterns below. Include number of actual contact hours ⁵ for each meeting pattern type.					
Current:	Lecture 3	Laboratory ⁵	Recitation	Discussion	Indep. Study
	Clinical	Colloquium	Practicum	Research	Residency
	Seminar	Studio	Other Please explain:		
Proposed: *	Lecture 3	Laboratory ⁵	Recitation	Discussion	Indep. Study
	Clinical	Colloquium	Practicum	Research	Residency
	Seminar	Studio	Other Please explain:		
f. Current Grading System:		ABC Letter Grade Scale			
Proposed Grading System:*		<input checked="" type="radio"/> Letter (A, B, C, etc.) <input type="radio"/> Pass/Fail <input type="radio"/> Medicine Numeric Grade (Non-medical students will receive a letter grade) <input type="radio"/> Graduate School Grade Scale			
g. Current number of credit hours:		3	Proposed number of credit hours:*		3
b.* Currently, is this course repeatable for additional credit?					<input type="radio"/> Yes <input checked="" type="radio"/> No
* Proposed to be repeatable for additional credit?					<input type="radio"/> Yes <input checked="" type="radio"/> No
If YES:		Maximum number of credit hours:			
If YES:		Will this course allow multiple registrations during the same semester?			<input type="radio"/> Yes <input checked="" type="radio"/> No
i. Current Course Description for Bulletin:					
A service course covering electrical engineering principles for engineering or science students with majors outside of electrical engineering. Topics include: circuits analysis, power, electronics, digital logic and instrumentation.					
* Proposed Course Description for Bulletin:					
A service course covering electrical engineering principles for engineering or science students with majors outside of electrical engineering. Topics include: AC and DC circuits analysis.					
j. Current Prerequisites, if any:					
Prereq: MA 114, PHY 232.					
* Proposed Prerequisites, if any:					
Prereq: MA 114, PHY 232.					
k. Current Supplementary Teaching Component, if any:				<input type="radio"/> Community-Based Experience <input type="radio"/> Service Learning <input type="radio"/> Both	
Proposed Supplementary Teaching Component:				<input type="radio"/> Community-Based Experience <input type="radio"/> Service Learning <input type="radio"/> Both <input type="radio"/> No Change	
3. Currently, is this course taught off campus?					<input type="radio"/> Yes <input checked="" type="radio"/> No
* Proposed to be taught off campus?					<input type="radio"/> Yes <input checked="" type="radio"/> No

If YES, enter the off campus address:			
4.* Are significant changes in content/student learning outcomes of the course being proposed?	<input checked="" type="radio"/> Yes <input type="radio"/> No		
If YES, explain and offer brief rationale:			
<p>The current EE 305 class has a wide variety of outcomes. For electrical engineers these topics are covered (in more depth but still) in at least four different classes (EE211, EE221, EE280, EE416). For the instructor it is almost impossible to cover all the topics needed to satisfy the outcomes in the time given in one semester, regardless of the fact that students are not able to grasp all the concepts presented to them in such a hurry. While I am working on developing an online version for EE 305 I would like to change the outcomes for EE 305 in its current version as well, so that both classes (online and the traditional classroom version) have the same set of outcomes.</p>			
5. Course Relationship to Program(s).			
a.* Are there other depts and/or pgms that could be affected by the proposed change?	<input checked="" type="radio"/> Yes <input type="radio"/> No		
If YES, identify the depts. and/or pgms:			
<p>Mechanical Engineering Biosystems Engineering Materials Engineering Mining Engineering</p>			
b.* Will modifying this course result in a new requirement² for ANY program?	<input checked="" type="radio"/> Yes <input type="radio"/> No		
If YES ² , list the program(s) here:			
6. Information to be Placed on Syllabus.			
a.	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:30%;"><input type="checkbox"/> Check box if changed to 400G or 500.</td> <td>If changed to 400G- or 500-level course you must send in a syllabus and you must include the <i>differentiation</i> between undergraduate and graduate students by: (i) requiring additional assignments by the graduate students; and/or (ii) establishing different grading criteria in the course for graduate students. (See SR 3.1.4.)</td> </tr> </table>	<input type="checkbox"/> Check box if changed to 400G or 500.	If changed to 400G- or 500-level course you must send in a syllabus and you must include the <i>differentiation</i> between undergraduate and graduate students by: (i) requiring additional assignments by the graduate students; and/or (ii) establishing different grading criteria in the course for graduate students. (See SR 3.1.4.)
<input type="checkbox"/> Check box if changed to 400G or 500.	If changed to 400G- or 500-level course you must send in a syllabus and you must include the <i>differentiation</i> between undergraduate and graduate students by: (i) requiring additional assignments by the graduate students; and/or (ii) establishing different grading criteria in the course for graduate students. (See SR 3.1.4.)		

Distance Learning Form

This form must accompany every submission of a new/change course form that requests distance learning delivery. This form may be required when changing a course already approved for DL delivery. All fields are required!

Introduction/Definition: For the purposes of the Commission on Colleges Southern Association of Colleges and Schools accreditation review, *distance learning* is defined as a formal educational process in which the majority of the instruction (interaction between students and instructors and among students) in a course occurs when students and instructors are not in the same place. Instruction may be synchronous or asynchronous. A distance learning (DL) course may employ correspondence study, or audio, video, or computer technologies.

A number of specific requirements are listed for DL courses. **The department proposing the change in delivery method is responsible for ensuring that the requirements below are satisfied at the individual course level.** It is the responsibility of the instructor to have read and understood the university-level assurances regarding an equivalent experience for students utilizing DL (available at <http://www.uky.edu/USC/New/forms.htm>).

Course Number and Prefix: EE 305	Date: 10/8/2013
Instructor Name: Regina Hannemann	Instructor Email: Regina.Hannemann@uky.edu

Check the method below that best reflects how the majority of the course content will be delivered.

Internet/Web-based
 Interactive Video
 Hybrid

Curriculum and Instruction

1. How does this course provide for timely and appropriate interaction between students and faculty and among students? Does the course syllabus conform to University Senate Syllabus Guidelines, specifically the Distance Learning Considerations?
Communication: Communication between instructor and student will be via email or virtual office meetings (by arrangement or during regularly scheduled office hours).
2. How do you ensure that the experience for a DL student is comparable to that of a classroom-based student's experience? Aspects to explore: textbooks, course goals, assessment of student learning outcomes, etc.
Students in the online course will have to watch videos in which the content is delivered that would normally be in a lecture setting. They will have ample examples and problems to solve for themselves. They
3. How is the integrity of student work ensured? Please speak to aspects such as password-protected course portals, proctors for exams at interactive video sites; academic offense policy; etc.
The online version will use Blackboard as the main communication tool. This has been used for parts of the face-to-face class as well and has been proven to be a safe tool while relying on the honor system of not
4. Will offering this course via DL result in at least 25% or at least 50%* (based on total credit hours required for completion) of a degree program being offered via any form of DL, as defined above?
no
- Which percentage, and which program(s)?
NA
- *As a general rule, if approval of a course for DL delivery results in 50% or more of a program being delivered through DL, the effective date of the course's DL delivery will be six months from the date of approval.
5. How are students taking the course via DL assured of equivalent access to student services, similar to that of a student taking the class in a traditional classroom setting?
The students have access to the instructor during office hours in the same way as traditional students. They can email or call with questions and will receive answers in a timely manner. This is how email

Library and Learning Resources

6. How do course requirements ensure that students make appropriate use of learning resources?
As in the traditional course there will be weekly homework and quizzes assigned. There will also be a discussion forum where students have to interact with each other and are required to post comments twice a
7. Please explain specifically how access is provided to laboratories, facilities, and equipment appropriate to the course or program.
This class does not need any laboratories, facilities or special equipment. A laptop with a webcam and microphone and internet access is all that is needed.

Student Services

8. How are students informed of procedures for resolving technical complaints? Does the syllabus list the entities available to offer technical help with the delivery and/or receipt of the course, such as the Information Technology Customer Service Center (<http://www.uky.edu/UKIT/>)?
Excerpt from the syllabus: Technical Support: Students experiencing difficulty with delivery of the course material should contact the instructor or the UK help desk at 859-218-HELP (4357) or at helpdesk@uky.edu
9. Will the course be delivered via services available through the Distance Learning Program (DLP) and the Academic Technology Group (ATL)?
 Yes
 No
- If no, explain how students enrolled in DL courses are able to use the technology employed, as well as how students will be provided with assistance in using said technology.
NA
10. Does the syllabus contain all the required components, below? Yes
- Instructor's *virtual* office hours, if any.
 - The technological requirements for the course.
 - Contact information for Distance Learning programs (<http://www.uky.edu/DistanceLearning>) and Information Technology Customer Service Center (<http://www.uky.edu/UKIT/Help/>; 859-218-HELP).
 - Procedure for resolving technical complaints.
 - Preferred method for reaching instructor, e.g. email, phone, text message.
 - Maximum timeframe for responding to student communications.
 - Language pertaining academic accommodations:
 - "If you have a documented disability that requires academic accommodations in this course, please make your request to the University Disability Resource Center. The Center will require current disability documentation. When accommodations are approved, the Center will provide me with a Letter of Accommodation which details the recommended accommodations. Contact the Disability Resource Center, Jake Kames, Director at 859-257-2754 or jkames@email.uky.edu."
 - Specific dates of face-to-face or synchronous class meetings, if any.
 - Information on Distance Learning Library Services (<http://www.uky.edu/Libraries/DLLS>)
 - Carla Cantagallo, DL Librarian
 - Local phone number: 859 257-0500, ext. 2171; long-distance phone number: (800) 828-0439 (option #6)
 - Email: dllservice@email.uky.edu
 - DL Interlibrary Loan Service: http://www.uky.edu/libraries/libpage.php?lweb_id=2538&lib_id=16

11. I, the instructor of record, have read and understood all of the university-level statements regarding DL.

Instructor Name:
Regina Hannemann

Abbreviations: DLP = Distance Learning Programs ATG = Academic Technology Group Customer Service Center = 859-218-HELP (<http://www.uky.edu/AUKIT/Help>)

Revised 9/09

- ^[1] See comment description regarding minor course change. *Minor changes are sent directly from dean's office to Senate Council Chair.* If Chair deems the change as "not minor," the form will be sent to appropriate academic Council for normal processing and contact person is informed.
- ^[2] Courses are typically made effective for the semester following approval. No course will be made effective until all approvals are received.
- ^[3] Signature of the chair of the cross-listing department is required on the Signature Routing Log.
- ^[4] Removing a cross-listing does not drop the other course – it merely unlinks the two courses.
- ^[5] Generally, undergrad courses are developed such that one semester hr of credit represents 1 hr of classroom meeting per wk for a semester, exclusive of any lab meeting. Lab meeting generally represents at least two hrs per wk for a semester for 1 credit hour. (See SR 5.2.1.)
- ^[6] You must also submit the Distance Learning Form in order for the course to be considered for DL delivery.
- ^[7] In order to change a program, a program change form must also be submitted.

Submit as New Proposal

Save Current Changes

EE 305 Electrical Circuits and Electronics (Fall 2014)

Instructor: Dr.-Ing. Regina Hannemann
Phone: 257-5156
E-Mail: r.hannemann@ieee.org
Office: 467A F. Paul Anderson Tower

TA: Xiao Liu
E-Mail: xiao.liu@uky.edu
Office: TBD

Office Hours:
T 9:30am - 11:00am
W 9:30am - 11:00am
or by appointment

Office Hours:
TBD
or by appointment

Course Description: A service course covering electrical engineering principles for engineering or science students with majors outside of electrical engineering. Topics include: AC and DC circuits analysis. Prereq: PHY 232, MA 114.

Outcomes:

1. Be able to apply Kirchhoff's Current Law and Kirchhoff's Voltage Law.
2. Be able to apply Ohm's Law, Voltage and Current Divider Rules.
3. Be able to apply node voltage analysis, mesh current analysis and superposition.
4. Be able to determine Thévenin and Norton equivalent sources.
5. Be able to explain energy storage devices, such as inductors and capacitors.
6. Be able to perform ac circuit analysis with phasors.
7. Be able to perform power analysis in AC and DC circuits.
8. Be able to perform basic circuit analysis for circuits containing operational amplifiers, transformers and other circuit elements.

Lectures TR (12:30-1:45 PM) Whitehall Classroom Building 102

Text: This class will use notes provided by the instructor. The pdf-file of these notes will be made available through the Blackboard website. Since the notes are still in a preliminary version, the following books may be used as additional reading:

Giorgio Rizzoni, *Principles and Applications of Electrical Engineering*, 4th revised Edition, McGraw-Hill, 2004

Allan R. Hambley, *Electrical Engineering, Principles and Applications*, 4th Edition, Prentice Hall, 2008

These books and others are on reserve in the Engineering Library. There is also a printout of the "notes" available at the library, where missing figures have been added in by hand.

Grade: Final averages will be computed as follows:

Homework Assignments	10%
Quiz Scores (lowest 3 dropped)	30%
Midterm Exam	27.5%
Final Exam	32.5%

Lower cut-offs for letter grades (A, B, C, D) will be (90, 80, 70, 60). Scores below 60 will result in a failing grade (E).

Mid-term grades will be posted in myUK by the deadline established in the Academic Calendar

<http://www.uky.edu/Registrar/AcademicCalendar.htm>.

Homework: Homework will usually be assigned every week between Thursday after class and Friday at lunchtime and will be due the following Thursday. If no homework is assigned for a given period, this will be made known in class.

Homework is due at the *beginning* of the lecture period. Late homework will not be accepted unless prior notice was given, or a valid excuse is provided. (See the section on excused absences)

Quizzes: There will be a quiz almost every week, typically given on Thursdays. The quizzes will be given via Blackboard. Quizzes are multiple choice tests and will cover lecture and assigned homework material. Quizzes will have a 15 minute time limit. There will be a window of 24 h for each quiz to be taken. The quiz material will focus on prior homework and lecture topics. All quizzes will be multiple choice. At least 12 quizzes will be given in the semester and the lowest three (3) test scores will be dropped for the final quiz score. Failure to take a quiz at the time it is given will result in a score of zero. **Makeup quizzes will not be given.** Upon the receipt of a graded quiz, if you have any question regarding the grading, it must be submitted in writing to the instructor by the next class period after being returned.

Exams: There will be one Midterm Exam and a comprehensive Final Exam. The exams will be closed-note and closed-book. These exams will be in class. Both exams will be taken in Blackboard with multiple choice questions and will cover lecture and assigned homework material. **Bring a charged laptop for the exams. If you do not own a laptop contact the instructor within the first two weeks of classes to make special arrangements.** If you have a special need while taking an exam, bring according documentation to the instructor during the first two weeks of the course. Students are required to bring a valid picture id to the exam. Makeup exams will be given only in case of provided valid excuses. (See the section on excused absences)

Exam Dates: *Midterm Exam:* Tuesday, October 21; *Final Exam:* Tuesday, December 16, 10:30am-12:30pm

Student Interaction:

Communication: Communication between instructor and student will be during class time, via email or office meetings (by arrangement or during regularly scheduled office hours).

Email: UK email addresses will be used. Students must activate e-mail forwarding if they prefer another primary e-mail address.

Blackboard Access: Blackboard will be used to communicate course content, announcements, exam grades, etc. UK's blackboard website is available through LINK BLUE on the UK homepage at <http://www.uky.edu>.

Technical Support: Students experiencing difficulty with delivery of the course material should contact the instructor or the UK help desk at 859-218-HELP (4357) or at helpdesk@uky.edu

Attendance Policy: Attendance of all class lectures is highly recommended to assure maximum course performance. You are responsible for all business conducted during the class period. You are expected to participate in the lecture. No attendance record will be kept and your grade will be determined only by the homework, quizzes, midterm exam, and final exam as indicated above.

Excused Absences: Students need to notify the professor of absences prior to class when possible. S.R. 5.2.4.2 defines the following as acceptable reasons for excused absences: (a) serious illness, (b) illness or death of family member, (c) University-related trips, (d) major religious holidays, and (e) other circumstances found to fit reasonable cause for nonattendance by the professor.

Students anticipating an absence for a major religious holiday are responsible for notifying the instructor in writing of anticipated absences due to their observance of such holidays no later than the last day in the semester to add a class. Information regarding dates of major religious holidays may be obtained through the religious liaison, Mr. Jake Karnes (859-257-2754).

Students are expected to withdraw from the class if more than 20% of the classes scheduled for the semester are missed

(excused or unexcused) per university policy.

Verification of Absences:

Students may be asked to verify their absences in order for them to be considered excused. Senate Rule 5.2.4.2 states that faculty have the right to request appropriate verification when students claim an excused absence because of illness or death in the family. Appropriate notification of absences due to university-related trips is required prior to the absence.

Academic Integrity: Per university policy, students shall not plagiarize, cheat, or falsify or misuse academic records. Students are expected to adhere to University policy on cheating and plagiarism in all courses. The minimum penalty for a first offense is a zero on the assignment on which the offense occurred. If the offense is considered severe or the student has other academic offenses on their record, more serious penalties, up to suspension from the university may be imposed.

Plagiarism and cheating are serious breaches of academic conduct. Each student is advised to become familiar with the various forms of academic dishonesty as explained in the Code of Student Rights and Responsibilities. Complete information can be found at the following website: <http://www.uky.edu/Ombud>. A plea of ignorance is not acceptable as a defense against the charge of academic dishonesty. It is important that you review this information as all ideas borrowed from others need to be properly credited.

Part II of *Student Rights and Responsibilities* (available online <http://www.uky.edu/StudentAffairs/Code/part2.html>)

states that all academic work, written or otherwise, submitted by students to their instructors or other academic supervisors, is expected to be the result of their own thought, research, or self-expression. In cases where students feel unsure about the question of plagiarism involving their own work, they are obliged to consult their instructors on the matter before submission.

When students submit work purporting to be their own, but which in any way borrows ideas, organization, wording or anything else from another source without appropriate acknowledgement of the fact, the students are guilty of plagiarism. Plagiarism includes reproducing someone else's work, whether it be a published article, chapter of a book, a paper from a friend or some file, or something similar to this. Plagiarism also includes the practice of employing or allowing another person to alter or revise the work which a student submits as his/her own, whoever that other person may be.

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Accommodations due to disability:

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Tentative Schedule

Below are the topics listed by week. Lecture days are Tuesdays and Thursdays, 12:30pm–1:45pm. Week 1 is only half a week at the beginning of the semester with only a Thursday lecture.

Quizzes and Homework are tentatively scheduled for each week. Actual assignment schedule might change. There will be at least 12 Homework assignments and at least 12 Quizzes. Homework assignments are scheduled to be online sometime between Thursday after class and Friday at noon unless announced otherwise. Quizzes will be online for 24 hours between Thursdays at 2pm and Fridays at 2pm unless announced otherwise.

Exam dates:

Midterm: Tuesday, October 21, 12:30pm–1:45pm

Final: Tuesday, December 6, 10:30 am – 12:30 pm

week	Topics	HW due	HW assigned	Quiz
1.	Introduction, Syllabus, History, Units		HW1	
2.	Charge, Current, Voltage, Ideal Sources, Kirchhoff's Laws, Element Labeling, Active and Passive Elements	HW1	HW2	Q1
3.	Elements in Series and Parallel, Power and Sign Convention, $i-v$ Characteristics	HW2	HW3	Q2
4.	Resistance, Ohm's Law, Series Resistors, Voltage Divider Rule	HW3	HW4	Q3
5.	Parallel Resistors, Current Divider Rule, Wheatstone Bridge	HW4	HW5	Q4
6.	Node Voltage Analysis	HW5	HW6	Q5
7.	Mesh Current Analysis	HW6	HW7	Q6
8.	Superposition and Review	HW7	HW8	Q7
9.	Midterm Exam and Energy Storage Devices, Capacitor, Inductor	HW8	HW9	Q8
10.	Time-Dependent Signal Sources, Complex Numbers	HW9	HW10	Q9
11.	Phasor Notation, Impedance, Admittance	HW10	HW11	Q10
12.	AC Circuit Analysis	HW11	HW12	Q11
13.	AC Power, Complex Power	HW12	HW13	Q12
	<i>Thanksgiving</i>			
14.	Operational Amplifiers, Active Filters, Integrator, Differentiator	HW13	HW14	Q13
15.	Review	HW14		

EE 305 Electrical Circuits and Electronics Online (Spring 2015)

Disclaimer: All times listed in this syllabus are stated in Eastern Standard Time (EST) -0500 UTC for all dates before March 8, 2015, 2am and in Eastern Daylight Time (EDT) -0400 UTC after March 8, 2015, 3am.

Instructor: Dr.-Ing. Regina Hannemann
Phone: 257-5156
E-Mail: r.hannemann@ieee.org
Virtual Office: <http://www.uky.edu>

Office Hours:
T 9:30am - 11:00am
W 9:30am - 11:00am
or by appointment

Course Description: A service course covering electrical engineering principles for engineering or science students with majors outside of electrical engineering. Topics include: AC and DC circuits analysis. Prereq: PHY 232, MA 114.

Outcomes:

1. Be able to apply Kirchhoff's Current Law and Kirchhoff's Voltage Law.
2. Be able to apply Ohm's Law, Voltage and Current Divider Rules.
3. Be able to apply node voltage analysis, mesh current analysis and superposition.
4. Be able to determine Thévenin and Norton equivalent sources.
5. Be able to explain energy storage devices, such as inductors and capacitors.
6. Be able to perform ac circuit analysis with phasors.
7. Be able to perform power analysis in AC and DC circuits.
8. Be able to perform basic circuit analysis for circuits containing operational amplifiers, transformers and other circuit elements.

Text: This class will use notes provided by the instructor. The pdf-file of these notes will be made available through the Blackboard website. Since the notes are still in a preliminary version, the following books may be used as additional reading:

Giorgio Rizzoni, *Principles and Applications of Electrical Engineering*, 4th revised Edition, McGraw-Hill, 2004

Allan R. Hambley, *Electrical Engineering, Principles and Applications*, 4th Edition, Prentice Hall, 2008

These books and others are on reserve in the Engineering Library. There is also a printout of the "notes" available at the library, where missing figures have been added in by hand.

Required Material: Web cam and microphone (headset mic preferred). Access to scanner. White paper for homework.

Grade: Final averages will be computed as follows:

Homework Assignments	10%
Class Participation Grade	30%
Midterm Exam	27.5%
Final Exam	32.5%

Lower cut-offs for letter grades (A, B, C, D) will be (90, 80, 70, 60). Scores below 60 will result in a failing grade (E).

Mid-term grades will be posted in myUK by the deadline established in the Academic Calendar

<http://www.uky.edu/Registrar/AcademicCalendar.htm>

Homework: Homework will be due every Tuesday by noon. All homework must be completed on white paper (lined notebook paper or white printer paper), scanned and submitted on Blackboard in pdf format. Late homework will not be accepted unless prior notice was given, or a valid excuse is provided. (See the section on excused absences) See Tentative Schedule at the end of this syllabus for assignment and due dates.

Class Participation: The class participation grade will include the weekly web meeting, viewing the Required Content, weekly discussion board postings, and the weekly quizzes. Attendance in a weekly web meeting is required. Times to be arranged. See Tentative Schedule at the end of the syllabus for availability, typical content of modules, due dates etc. Makeup work for any work missed due to valid excuses (See the section on excused absences), needs to be arranged with the instructor before a scheduled absence or within a week of returning in case of an unscheduled absence.

Exams: There will be one Midterm Exam and a comprehensive Final Exam. The exams will be closed-note and closed-book. Both exams will be taken in Blackboard with multiple choice questions and will cover lecture and assigned homework material. The exams will be at proctored locations. These can be the locations of the University or made by special arrangement with the instructor. If you have a special need while taking an exam, bring according documentation to the instructor during the first two weeks of the course. Students are required to bring a valid picture id to the exam. Makeup exams will be given only in case of provided valid excuses. (See the section on excused absences)

Exam Dates: See Tentative Schedule at the end of the syllabus.

Student Interaction:

Communication: Communication between instructor and student will be via email or virtual office meetings (by arrangement or during regularly scheduled office hours).

Email: UK email addresses will be used. Students must activate e-mail forwarding if they prefer another primary e-mail address.

Blackboard Access: Blackboard will be used to communicate course content, announcements, exam grades, etc. UKs blackboard website is available through LINK BLUE on the UK homepage at <http://www.uky.edu>.

Technical Support: Students experiencing difficulty with delivery of the course material should contact the instructor or the UK help desk at 859-218-HELP (4357) or at helpdesk@uky.edu

Contact Information for Distance Learning programs: Students having any issues with the distance learning program should contact the Distance Learning Programs at <http://www.uky.edu/DistanceLearning>.

Distance Learning Library Services: If students need any information to be borrowed from a library, please go to <http://www.uky.edu/Libraries/DLLS>.

Attendance Policy: Please refer to the class participation section for information on required attendance.

Excused Absences: Students need to notify the professor of absences prior to class when possible. S.R. 5.2.4.2 defines the following as acceptable reasons for excused absences: (a) serious illness, (b) illness or death of family member, (c) University-related trips, (d) major religious holidays, and (e) other circumstances found to fit reasonable cause for nonattendance by the professor.

Students anticipating an absence for a major religious holiday are responsible for notifying the instructor in writing of anticipated absences due to their observance of such holidays no later than the last day in the semester to add a class. Information regarding dates of major religious holidays may be obtained through the religious liaison, Mr. Jake

Karnes (859-257-2754).

Students are expected to withdraw from the class if more than 20% of the classes scheduled for the semester are missed (excused or unexcused) per university policy.

Verification of Absences:

Students may be asked to verify their absences in order for them to be considered excused. Senate Rule 5.2.4.2 states that faculty have the right to request appropriate verification when students claim an excused absence because of illness or death in the family. Appropriate notification of absences due to university-related trips is required prior to the absence.

Academic Integrity: Per university policy, students shall not plagiarize, cheat, or falsify or misuse academic records. Students are expected to adhere to University policy on cheating and plagiarism in all courses. The minimum penalty for a first offense is a zero on the assignment on which the offense occurred. If the offense is considered severe or the student has other academic offenses on their record, more serious penalties, up to suspension from the university may be imposed.

Plagiarism and cheating are serious breaches of academic conduct. Each student is advised to become familiar with the various forms of academic dishonesty as explained in the Code of Student Rights and Responsibilities. Complete information can be found at the following website: <http://www.uky.edu/Ombud>. A plea of ignorance is not acceptable as a defense against the charge of academic dishonesty. It is important that you review this information as all ideas borrowed from others need to be properly credited.

Part II of *Student Rights and Responsibilities* (available online <http://www.uky.edu/StudentAffairs/Code/part2.html>)

states that all academic work, written or otherwise, submitted by students to their instructors or other academic supervisors, is expected to be the result of their own thought, research, or self-expression. In cases where students feel unsure about the question of plagiarism involving their own work, they are obliged to consult their instructors on the matter before submission.

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Tentative Schedule

The online course is organized in "weekly" modules. On Wednesday of each week a module will be published on Blackboard. The module published on the Wednesday before Spring Break (Module 9) will last till the week after the break. This Module (9) also has the midterm exam included, which must be taken before Spring Break.

The table at the end of the syllabus lists the topics for each module. Each module will typically consist of the following parts:

- Required Content
- Quiz
- Homework
- Discussion Board

The **Required Content** will typically consist of:

- movies/slides explaining the concepts
- worked examples
- examples with no answers provided (might be discussed in weekly web meeting and or in the discussion boards)

Participation in the Discussion Boards (Participants are strongly encouraged to post early in the discussion boards. Deadlines given here will not be extended. Participants have to expect that late (close to the deadline) entries/questions might not be seen by other participants anymore and might not be answered by the group.):

- at least 2 postings per module are required.
- first posting should be posted latest by Friday by noon.
- second posting latest at Monday by noon (or 2 hours before the scheduled web meeting, whichever comes first).
- for module 9, the first posting is due latest by Wednesday of Spring Break by noon and the second posting is due by Monday after Spring Break by noon (or 2 hours before the scheduled web meeting, whichever comes first).

The **Homework** assignments are due on Tuesdays at noon unless announced otherwise.

Quizzes are due on Tuesdays at 5pm unless announced otherwise. Quizzes can only be taken once. It is strongly recommended to take the quizzes earlier than during the last two hours of their availability to give the instructor time to react to any issues in a timely manner.

The **Weekly Web Meeting** will be scheduled with participants. The day would be preferably on Monday, the time will be coordinated according to availability and timezone location of participants. The instructor will thrive to schedule the meeting according to all participants needs, but might be forced to go only by a majority. If a participant is not available for the meetings on a regular basis due to scheduling conflicts, the instructor will work with the student to provide a form of makeup work. This possibility is not guaranteed and will be worked on only on an individual basis.

Exam dates:

Midterm: During the first half of module 9 (Wednesday March 11— Friday March 13 5pm), date, time, and location to be arranged with the instructor

Final: Finals Week (Monday May 5 — Friday May 9), date, time, and location to be arranged with the instructor

week	Topics
1.	Introduction, Syllabus, History, Units
2.	Charge, Current, Voltage, Ideal Sources, Kirchhoff's Laws, Element Labeling, Active and Passive Elements
3.	Elements in Series and Parallel, Power and Sign Convention, i-v Characteristics
4.	Resistance, Ohm's Law, Series Resistors, Voltage Divider Rule
5.	Parallel Resistors, Current Divider Rule, Wheatstone Bridge
6.	Node Voltage Analysis
7.	Mesh Current Analysis
8.	Superposition and Review
9.	Midterm Exam and Energy Storage Devices, Capacitor, Inductor
10.	Time-Dependent Signal Sources, Complex Numbers
11.	Phasor Notation, Impedance, Admittance
12.	AC Circuit Analysis
13.	AC Power, Complex Power
14.	Operational Amplifiers, Active Filters, Integrator, Differentiator
15.	Review and Final Exam