

Wilberforce University

Division: Professional Studies Division

Course Syllabus

Course:	EGR 342 Linear Systems
Term:	Spring 2012
Instructor:	Name: Deok Hee Nam Email Address: wuclasses@yahoo.com Phone Number: (937) 708 – 5624
Catalog Description:	This course will study time and frequency domain representation of continuous-time signals and systems, and solutions of their response, simulation of linear systems, Fourier series and transform, Laplace Transform, stability of the linear systems, and all types of signals and their characteristics.
Prerequisites	EGR 221, 232, and MAT 231 with C or higher
Course Level Learning Outcomes:	<ul style="list-style-type: none">• Understand basic concepts of linear systems and how they interact with continuous-time signals.• Use MATLAB to analyze continuous-time signals and systems.• Be able to find the response of linear systems in the time domain.• Be able to represent and analyze systems in the frequency domain.• Be able to apply time and frequency domain methods to gain an understanding of communication systems and feedback control systems.
Materials:	Textbook: Continuous Signals and Systems with MATLAB by Taan ElAli, and Mohammad Karim, 2nd ed. CRC press, 2007
Grading:	Grading Scale 90 – 100 % = A

	<p>80 – Less than 90 % = B 70 – Less than 80 % = C 60 – Less than 70 % = D Below 60 % = F</p> <table border="0"> <tr> <td style="text-align: right;"><i>Required Assignments</i></td> <td style="text-align: right;"><i>Approx. Max. Possible points</i></td> </tr> <tr> <td>3 Exams</td> <td>300 points</td> </tr> <tr> <td>Final Exam</td> <td>100 points</td> </tr> <tr> <td>Homework Assignments</td> <td>120 points</td> </tr> <tr> <td>Attendance /Participation/Attitudes</td> <td>88 points</td> </tr> <tr> <td>Total</td> <td>608 points</td> </tr> </table> <p><i>(Approx. Max possible points are tentative and may be different in each semester.)</i></p>	<i>Required Assignments</i>	<i>Approx. Max. Possible points</i>	3 Exams	300 points	Final Exam	100 points	Homework Assignments	120 points	Attendance /Participation/Attitudes	88 points	Total	608 points
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	<p>A student’s proficiency in course work is measured in terms of the following Alphabetical symbols. Minuses and pluses are not accepted.</p> <p>A: Excellent</p> <p>B: Good</p> <p>C: Satisfactory (Grade C or better required in major courses).</p> <p>D: Poor (passing, except in major courses).</p> <p>F: Earned Failure. (Removed only by repeating the course). Upon successfully passing the course, the first grade is “excluded” from grade point average. The second grade is “included in the recalculation of the grade point average.</p> <p>I: Incomplete (student performing satisfactorily, but unable to complete coursework due to valid reason).</p> <p>N: Used in cases where grades are not yet submitted.</p> <p>W: Withdrew before course drop deadline.</p> <p>WP: Student withdraws from University. Withdrew passing after course drop deadline (2 weeks after mid-term).</p> <p>WF: Student withdraws from University. Withdrew failing after course drop deadline</p>												

	<p>(2 weeks after mid-term. WF is treated as an F (punitive grade). CR: Credit/pass NC: No credit/fail Z: Failed course for non-attendance/unofficial withdrawal (treated the same as an F grade). Last date of attendance is reported by faculty.</p>
<p>Activities:</p>	<ul style="list-style-type: none"> • The students required to finish all homework assignments and exams to pass the course successfully. • The homework assignments are based upon the lecture materials for practicing the hands-on problems. • The exams are based upon the lecture materials to help the students understand the teaching materials better through the various types of problems.
<p>Policy Statements:</p>	<ul style="list-style-type: none"> • The students must bring the textbook and the lecture notes every class time. Otherwise, the students will be penalized by 5 points per occurrence from the participation points. • The students are encouraged to discuss assignments with other helpers, but the work that you turn in must be your own original work (individual work) without any duplication. • The student will be penalized if the collusion, copying, and plagiarism programming work was detected. • To receive a grade, A, you must complete <u>all exams and homework assignments</u> successfully without failing grades (PASS: 70 % or above, FAIL: below 70 % out of 100 scale). • No submission of homework assignments will cause the penalty score (same as the distributed score for the assignments) from your earned score. • No Make-Ups. (Except emergency situations with the university's consents only) • NO "I" Grade will be given. • All exams will be closed all resources including books, computers, homeworks and notes.

University Policies:

Academic Honesty:

Plagiarism and cheating are completely unacceptable in an institution of higher education and learning. Such behavior deprives the student involved of the desired education and development of an appropriate value system. It is extremely unfair to other students, and it severely diminishes the value and integrity of a University degree.

Plagiarism occurs whenever another's work is submitted as one's own. This includes the use of information from an Internet site or from a published author's ideas and words without proper attribution or documentation. It also includes the copying of term papers, other unpublished works, homework, case reports, computer programs and spreadsheets, and any other course assignments which are submitted for course credit as the student's own effort.

Each instructor shall state the specific penalties for plagiarism and cheating in the course syllabus. The instructor has final responsibility for assessing the penalty in such cases regarding the course grade.

All cases of plagiarism and cheating will be referred to the Vice President for Academic Affairs for possible further action. Additional penalties may be imposed for the egregious cases of plagiarism and cheating.

Drops and Withdrawals

Dropping Courses:

A course may be dropped up through the end of the second week of the semester without any record on the transcript. After this date, a course may be dropped up to two weeks after mid-term grade reports are due, with a W appearing on the transcript. Withdrawals after mid-terms must be approved by the Vice-president of academic Affairs.

In certain General Studies core courses, students' assignments to course sections may be changed by faculty with written notification given to the Registrar. In all other cases, a student wishing to move from one section of a course to another must accomplish this by using a drop-add form to drop the old section and add the new section.

	<p>Withdrawal/Grading Policies The following procedures will apply to all students withdrawing from the University. Grades will be given in regard to the time of withdrawal. Contact the Registrar’s Office for forms and assistance.</p> <ul style="list-style-type: none"> • W (official withdrawal initiated by the student): To be given when a student withdraws between the first day of class/registration and the last day to drop courses, this is two weeks after mid-term exams. • AW (unofficial withdrawal not initiated by the student): The student does not inform anyone that he/she is leaving campus (the student walks out). The university may also administratively withdraw a student for disciplinary reasons, academic legal anytime during the semester. <p><u>Special Accommodations:</u> A student who is ill or who has or develops medical conditions including but not limited to illness, physical or other disability or pregnancy must notify the Director of Health Services immediately.</p>
<p><u>Classroom Conduct:</u> State your requirements about cell phone use, text messaging and other related technology in your class. Include your expectations about class interruption, disruption and inconsiderate behavior.</p>	<ul style="list-style-type: none"> • Cellular phones and exploring e-mails are not allowed during the class time and the examination time. • No hats, No sunglasses, No headphones / earphones, No internet surfing or chatting, and No e-mail check will be allowed during the class time or the examination time. The clothes and attitudes of students must be appropriate for the class. All cellular phones must be off before the class starts. Otherwise, the penalty, 5 points, will be given including the inappropriate work or attitude toward the class or the instructor.
<p><u>Contact Hours:</u> Specify all classes meet for the full-time stated on schedule. Classes cannot be shortened or cancelled without prior permission. Cancelled classes must be rescheduled.</p>	<p><u>Lecture Hours:</u> M, W, F 1:00 ~ 1:50 PM</p> <p><u>Office Hours:</u> M, W, F 11 am – 12 pm M, W, Th 2 pm – 3 pm</p>

	<u>Classroom:</u> King 301
Course Policies :	<ul style="list-style-type: none"> • The student must be in the class before the class or exam starts. If you are late please use the back door without any interruption (very quietly) and no extension time will be given. • The student must stay in the classroom during the whole class period or the whole examination time. The student must prepare all the matters before the class or exam starts. (No restroom visits during the class time or exam time.) • The students will be responsible for any missing or skipped class / exam / quiz / lab / class work / homework programming assignment. • The student must perform the appropriate work with the appropriate attitude during the class time or the examination time. There will be a penalty if the instructor considers a student is not working properly for the class. • For all exams and quizzes, use only pencils and bring erasers. (NO INK PENS, please.....) • Topics to be covered, assignments, attendance points and polices are subject to change.
Weekly Schedules:	<p>Week 1: Signal representation (Continuous Signals, Periodic & Non-periodic Signals, Sinusoidal Signals)</p> <p>Week 2 Signal representation (Energy & Power Signals, Shifting Operation, Reflection Operation, Even & Odd Functions)</p> <p>Week 3: Signal representation (Time Scaling, Unit Step Signal, Signum Signal, Ramp Signal, Sampling Signal, Impulse Signal)</p> <p>Week 4: Continuous Systems (Linear Continuous System, Time-Invariant System, Systems without Memory, Causal Systems)</p> <p>Week 5: Continuous Systems (Inverse of a system, Stable Systems, Convolution)</p> <p>Week 6: Continuous Systems (Block Diagram, Differential Equations, Homogeneous Differential Equations)</p> <p>Week 7: Continuous Systems (Non-homogeneous Differential Equations, Stability of Linear Continuous Systems, Block Diagram Representation)</p> <p>Week 8: Midterm exam and Continuous Systems</p>

	<p>(Differential Equations to Block Diagram Representation, Impulse Response)</p> <p>Week 9: Fourier Series (Review of Complex Numbers, Orthogonal Functions, Periodic Signals)</p> <p>Week 10: Fourier Series (Conditions for writing a signal as a Fourier Series Sum, Basis Functions, Magnitude & Phase Spectra, Fourier Series and Sin-Cos Notation)</p> <p>Week 11: Fourier Series (Fourier Series Approximation , Theorem of Parseval, Systems with Periodic Inputs, Steady State Response)</p> <p>Week 12: Fourier Transform and Linear Systems (Defintion, Fourier Transform Pair)</p> <p>Week 13: Fourier Series (Energy of Non-Periodic Signals, Energy Spectral Dnesity of a Linear System)</p> <p>Week 14: Laplace Transform and Linear Systems (Definition, Inverse Laplace Transform, Representation of Transfer Functions as Block Diagrams)</p> <p>Week 15: Laplace Transform and Linear Systems (Drawing Block Diagram from the transfer function, LTI Systems, Differential equations, Initial & Final Value Theorem)</p> <p>Week 16: Final Exam week</p> <p>Note: This is a tentative schedule which may be modified or changed by the instructor based upon the students' performance about the course including the students' understanding levels, or the updated class schedules of each semester.</p>
<p>Advising & Tutorial Support:</p>	<p>There are tutoring sessions for the course with the assigned tutor(s).</p> <p>Please see the schedules for the tutor(s) and tutoring rooms in about 3 weeks after the class starts.</p>