

**FLORIDA INTERNATIONAL UNIVERSITY
UNIVERSITY CURRICULUM COMMITTEE
Course Change/Deletion Request**

DO NOT TYPE IN THIS BOX

Bulletin # : _____
Academic Year : _____

INSTRUCTIONS: Fill out Part I completely. In Part II, fill out the items which have changed and explain reason for change.

I. 1a. SCHOOL/COLLEGE Engineering and Computing DIV./DEPT. IN WHICH TAUGHT Electrical and Computer Engineering
 b. DIV./DEPT. NO. EGEL DEPT. ACCOUNT NO. 2124001
 (9 digits)
 2a. Present Course Title System Lab
 b.

<u>EEL</u>	<u>4</u>	<u>611</u>	<u>L</u>	<u>1</u>		
Alpha Prefix	1st Digit	last 3 Digits	"C"-lec-lab "L"-Lab	Cr. Hrs.	HEGIS No. (6 digits)	CIP Code (Leave this blank)

 3. Deletion Request? Yes Effective Date / / 20
 a. Reason for Deletion: _____
 b. Skip Change Information Section (Part II)
 No Fill out Part II.


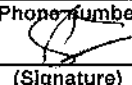
II. CHANGE INFORMATION ONLY

4a. New Title: _____ Change Effective / / 20
 b. Abbreviated course Title (for computer class schedules, transcripts) _____
 25 Characters (including spaces)
 5a.

<u>New</u>	<u>1st</u>	<u>last 3</u>	<u>"C"-lec-lab</u>	Credit Hours: From <u> </u> To <u> </u>
Alpha Prefix	Digit	Digits	"L"-Lab	

 6. Catalog Description (not to exceed 200 characters including spaces) _____
 7. New Prerequisite(s): _____ New Corequisite(s): EEL 3657
 8. Explain Reclassification Request: _____

CHANGE REQUESTED BY:

Faculty Contact	<u>Herman Watson</u>		<u>09/04/2012</u>
	(Type name)	(Signature)	
	<u>herman.watson@fiu.edu</u>	<u>(305)348-3018</u>	
	(Email address)	(Phone number)	
Chairperson (Dept./Div.)	<u>Shekhar Bhansali</u>		<u>9/4/2012</u>
	(Type name)	(Signature)	
Chairperson (Curr. Comm.)	<u>Nagarajan Prabhakaran</u>		<u> </u> / <u> </u> / 20 <u> </u>
	(Type name)	(Signature)	
College/School Dean	<u>Amir Mirmiran</u>		<u> </u> / <u> </u> / 20 <u> </u>
	(Type name)	(Signature)	

APPROVED BY:

University Curriculum Committee	<u> </u> / <u> </u> / 20 <u> </u>
Faculty Senate Chairperson	<u> </u> / <u> </u> / 20 <u> </u>
Academic Affairs V.P.	<u> </u> / <u> </u> / 20 <u> </u>

Submit one original copy of this form. Attach one hard copy and one electronic copy of the course syllabus containing: Objectives, Learning Outcomes, Major Topics and Textbooks.

Department of Electrical and Computer Engineering

FALL 2012

EEL 4611L - SYSTEMS LABORATORY

Instructor: Chayapol Chaiyanan **Office Hours:** 11:00am-12:00am

Email: cchai002@fiu.edu **Office:** EC3265B

Catalog Description: Laboratory experiments in various systems. Includes position and velocity control systems, zero order, first order and second order systems. Communications systems. (1 Credit)

Course Web Site: web.eng.fiu.edu/amauryc **USN:**systemslab **Pwd:**110507

Corequisites: EEL 3657

Textbook: lab manuals can be obtained from the website above.

Course Objectives:

By completing this course, students will know:

1. How to develop a system block diagram to fulfill system specifications
2. How to create a technical report to document an engineering project
3. How to obtain the DC-motor and tacho-generator characteristics
4. How to analyze control systems with feedback and the influence of gain on the system stability
5. How to introduce velocity feedback into a closed-loop position controller and its effects
6. How a simple system follows a ramp with an error, and the effect of the gain on the system response
7. How information is modulated and demodulated using amplitude modulation
8. How information is modulated and demodulated using frequency modulation

Relationship of course to program outcomes

- (a) an ability to apply knowledge of mathematics, science, and engineering;
- (b) an ability to design and conduct experiments, as well as to analyze and interpret data;
- (c) an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability;
- (e) an ability to identify, formulate, and solve engineering problems;
- (g) an ability to communicate effectively;
- (k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice;
- (l) an ability to apply probability and statistics;

(m) a knowledge of advanced math (D.E., Linear Algebra, Complex Variables, and Discrete Mathematics).

Topics Covered:

Control Systems

1. Fundamentals of SFT154 Servo Trainer
2. Motor, tacho-generator and brake characteristics
3. Error channel and feedback polarity.
4. The influence of gain and velocity feedback

Communication Systems

5. Amplitude modulation
6. Amplitude shift keying
7. Frequency modulation
8. Frequency shift keying

Class Schedule: One meeting per week of 2 hours in the laboratory

The course grade will be decided using the following weighing of the data:

Experiments	60%
Attendance/Participation	20%
Project	20%

Grading:

Letter Range	Letter Range	Letter Range
A 94+	B- 81+	D+ 65+
A- 90+	C+ 77+	D 60+
B+ 87+	C 73+	D- 55+
B 84+	C- 69+	F 54-

Lab. Regulations

1. Students shall study the material related to the practical work before attending it.
2. Before starting a new experiment, student will present to the instructor the previous experiment report.
3. A final project will be assigned to the students after the first half of the course. The project duration will be between three and four weeks.

4. Attendance is mandatory; however, students will be allowed to make the experiments they did not realize due to properly justified reasons, during the semester last two weeks.

Technical Report Guidelines

Cover Page

- a) Title of report
- b) Author and Student ID
- c) Group Number
- d) Course name
- e) Submitted to TA's name or Instructor's name
- f) Department of Electrical and Computer Engineering
- g) Florida International University
- h) Date submitted

Abstract (-10%)

No Abstract. Anyone turn in an abstract will get their point deducted.

Introduction (10%)

Briefly outline theory and background information relevant to the experiment

Equipments (30%)

All equipments used in the experiments. List all the modules (Tachometer, Magnetic Break, Modulator, etc).

Procedures (20%)

Description of the experiment, use block diagrams to explain the setup

Results and Discussion (30%)

Present results and their interpretation

Label all figures

Answer the questions from the manual

Conclusion (10%)

Summarize results of study

References (0%)