ELECTRICAL ENGINEERING DEGREE
ELECTRICAL ENGINEERING CONCENTRATION
STANDARD SCHEDULE OF COURSE WORK

Fall Semester		Spring Semester	
Freshman Year	**Credits**		**Credits**
ECE102 Digital Circuit Logic	4	CS160 Foundations in Programming **OR**	
MATH160 Calculus for Physical Scientists I	4	CS155 Unix, CS156 CI, CS157 C II	3-4
CO150 College Composition	3	ECE103 DC Circuit Analysis	3
Univ. Core (Historical Perspectives)	3	MATH161 Calculus for Physical Scientists II	4
	14	PH141 Physics for Scientists and Engineers I	5
			15-16
Sophomore Year			
ECE251 Introduction to Microprocessors	4	ECE202 Circuit Theory Application	4
MATH261 Calculus for Physical Scientists III	4	MATH340 Intro to Ordinary Differential Equations **OR**	
PH142 Physics for Scientists and Engineers II	5	MATH345 Differential Equations **	4
Science/Math/Engineering Elective*	3	CHEM111 General Chemistry I	4
	16	Science/Math/Engineering Elective*	3
			15
Junior Year (CO150 must be passed before the Junior Year)			
ECE/STAT303 Intro to Communications Principles	3	ECE312 Linear Systems Analysis II	3
ECE311 Linear Systems Analysis I	3	ECE332 Electronics Principles II	4
ECE331 Electronics Principles I	4	ECE342 Electromagnetic Fields and Devices	3
ECE341 Electromagnetics	3	Science/Math/Engineering Elective*	3
CO301B Writing in the Disciplines-Sci. **OR**		Univ Core (Global & Cultural Awareness)	3
JTC300 Professional & Technical Comm.	3		
	16		16
Senior Year (EE312, 332, and 342 must be completed before starting EE401)			
ECE401 Senior Design Project I	3	ECON202 Microeconomics	3
ECE471 Semiconductor Devices	3	ECE402 Senior Design Project II	3
Senior Technical Electives	6	Senior Technical Electives	9
Univ Core (Arts & Humanities)	3	Univ. Core (Arts & Humanities)	3
	15		18

Grand Total: 125 - 126 Credits

Prepared by the Undergraduate Curriculum Committee; approved by the ECE faculty effective Fall 2008.

*See page 3 for explanation of this requirement.

Students taking MATH345 **MUST take the prerequisite, MATH229. MATH229 may be counted as 2 credits towards the Science/Math/Engineering elective requirement.

ELECTRICAL ENGINEERING DEGREE
LASERS & OPTICAL ENGINEERING CONCENTRATION
STANDARD SCHEDULE OF COURSE WORK

	Fall Semester		**Spring Semester**	
Freshman Year		**Credits**		**Credits**
CO150 College Composition		3	CS160 Foundations in Programming	**OR**
Univ. Core (Historical Perspectives)		3	CS155 Unix, CS156 CI, CS157 C II,	3-4
ECE102 Digital Circuit Logic		4	MATH161 Calculus for Physical Scientists II	4
MATH160 Calculus for Physical Scientists I		4	PH141 Physics for Scientists and Engineers I	5
		14	ECE103 DC Circuit Analysis	3
				15-16
Sophomore Year				
MATH261 Calculus for Physical Scientists III		4	ECE202 Circuit Theory Application	4
PH142 Physics for Scientists and Engineers II		5	MATH340 Intro to Ordinary Differential Equations **OR**	
ECON202 Microeconomics		3	MATH345 Differential Equations **	4
CHEM111 General Chemistry I		4	PH314 Intro. to Modern Physics	4
		16	Univ. Core (Arts & Humanities)	3
				15
Junior Year	(CO150 must be passed before the Junior Year)			
ECE311 Linear Systems Analysis I		3	ECE332 Electronics Principles II	4
ECE331 Electronics Principles I		4	ECE342 Electromagnetic Fields & Devices	3
ECE341 Electromagnetics		3	Science/Math/Engineering Elective	3
PH353 Optics and Waves		4	Univ Core (Arts & Humanities)	3
Univ Core (Global & Cultural Awareness)		3	CO301B Writing in the Disciplines-Sci. **OR** JTC300 Professional & Technical Comm.	3
		17		16
Senior Year	(ECE332, and 342 must be completed before starting ECE401)			
ECE/STAT303 Intro to Communications Principles		3	ECE402 Senior Design Project II	3
ECE401 Senior Design Project I		3	Technical Electives in Optoelectronics	9
ECE404 Experimental Optical Electronics		2	ECE457 Fourier Optics	3
ECE441Optical Electronics		3		
ECE471 Semiconductor Devices		3		
PH451 Intro to Quantum Mechanics I		3		
		17		15

Grand Total: 125-126 Credits

Prepared by the Undergraduate Curriculum Committee; approved by the ECE faculty effective Fall 2008

*See page 3 for explanation of this requirement.

Students taking MATH 345 **MUST take the prerequisite, MATH229. MATH229 may be counted as 2 credits towards the Science/Math/Engineering elective requirement.

THE SIX ACADEMIC REQUIREMENTS

1. *Required Total Credits*

Electrical Engineering -- 125-126; Lasers & Optical Engineering Concentration – 125-126

2. *Grade Requirements*

University -- 2.00 GPA (p. 94)

College -- 2.00 GPA in all required engineering, math, chemistry and physics courses (p. 182)

Department -- every 100-, 200-, and 300-level required ECE course must be passed with a minimum grade of C. Students receiving a grade below C will not be allowed to take any ECE course for which that course is a prerequisite until such time as the C or above grade requirement is met. 2.00 ECE GPA (in all ECE courses taken)

Courses taken outside of the ECE Department. Students must meet all grade minimums set by other Departments for prerequisite courses.

3. *Science/Math/Engineering Electives*[1] 9 credits (EE Concentration), 3 credits (Lasers & Optical Engineering concentration) chosen from the list available on the ECE Department web site.

NOTES:
* Alternative courses may be taken with PRIOR written approval of the Department Head.
Courses used for major requirements may NOT be counted as Science/Engineering Elective Credits.
Students may substitute additional Technical Elective credits in place of Science/Engineering Elective credits.

4. *Technical Elective*s

EE Concentration -- 15 credits. Any 400 or 500 level ECE course which is not required for the major or any course listed as a Technical Elective for Lasers & Optical Engineering or Computer Engineering for which the student has met all prerequisites.

Lasers & Optical Engineering Concentration -- 9 credits chosen from the following list:

ECE450 Digital System Design Lab	ECE546
ECE451 Digital System Design	ECE557
ECE503	ECE570
ECE504	ECE574
ECE505	ECE557
ECE506	ECE571
ECE507	PH452
ECE525	

* Courses required in the concentration may not also be used as an elective.
This list is subject to frequent changes. Contact the Department or check the ECE Department web site for the most current listing of acceptable technical elective courses.

5. *All-University Core Curriculum*

Category 1 - Basic Competencies		
A – Intermediate Writing	CO150[1]	3 cr.
B - Mathematics	MATH160	3 cr.
Category 2 – Advanced Writing	CO301B OR JTC300	
Category 3 - Foundations & Perspectives		
A - Biological/Physical Sciences	PH141	5 cr.

PH142 5 cr.

B - Arts/Humanities (6 credits)
Choose from the list available in the current General Catalog or Class Schedule. No more than 3 credits of intermediate foreign languages may be used toward this category.

C - Social/Behavioral Sciences ECON202 3 cr.

D - Historical Perspectives (3 credits)
Choose from the list available in the current General Catalog or Class Schedule

E - Global & Cultural Awareness (3 credits)
Choose from the list available in the current General Catalog or Class Schedule

I
[1] Students in the Honors Program substitute HPCC193.

BACKGROUND INFORMATION

STUDENTS ARE ULTIMATELY RESPONSIBLE FOR KNOWING AND FULFILLING THE REQUIREMENTS FOR GRADUATION. THESE REQUIREMENTS ARE LISTED IN THE GENERAL CATALOG AND EACH SEMESTER'S COURSE SCHEDULE.

1. *Required Total Credits*
   A minimum of 30 upper-division semester credits must be completed in residence at CSU as a major in the College of Engineering as verified by the Electrical and Computer Engineering Department. A minimum of 42 upper-division semester credits (300-400 level) is required of all students completing a bachelor's degree program. Elective credits taken at the 500 level may be used to fulfill this requirement.

2. *Grade Requirements*
   All courses must be taken for a grade. The original grade and grades earned in repeated courses are both used in calculating grade point averages, unless a student exercises Repeat/Delete policy explained in the Grading and Scholastic Standards section of the General Catalog. Only the most recent grade of a repeated course is used in calculating the ECE GPA.

3. *Prerequisites and Co-requisites*
   Meeting course prerequisites and co-requisites is the responsibility of the student. Math department policy is that module prerequisites must be satisfied on the first day of class.

4. *Professional Development*
   The College of Engineering recognizes the need for global awareness for tomorrow's engineers. To this end, the College of Engineering is providing opportunities for professional development for all students. Workshops have been designed with Engineering students in mind – to enhance their experience here at CSU. As our profession becomes more global in orientation, the skills required to succeed go beyond the traditional classroom offerings. Space is limited, review the available workshops and RSVP to ensure admittance to any workshop.
   The website is: http://www.engr.colostate.edu/pli/index.shtml