

Lasers & Optical Engineering Concentration

Degree requirements - 125-126 credits

FRESHMAN YEAR - 29-30 credits (semester; prerequisites)

Fall		Credits
ECE102	Digital Circuit Logic (F)	4
CO150 ^(a)	College Composition (F,S,SS; CO 130 or Placement)	3
MATH160	Calculus for Physical Scientists I (F,S,SS; MATH124 with a minimum grade of B; MATH126 with a minimum grade of B)	4
University Core ^(b)	Foundations & Perspectives (F,S,SS)	3
Spring		
ECE103	DC Circuit Analysis (F,S; MATH160 with a minimum grade of C)	3
CS163 OR CS164 OR CS155, CS156, CS157	Java (CS1) No Prior Programming (F,S,SS; MATH124 with a minimum grade of C) OR Java (CS1) Prior Programming (F,S; MATH124 with a minimum grade of C) OR Unix, C Programming I & II (F,S; MATH118; concurrent registration in CS155, CS156 and CS157)	3 - 4
MATH161	Calculus for Physical Scientists II (F,S,SS; MATH124; MATH160)	4
PH141	Physics for Scientists and Engineers I (F,S,SS; MATH126; MATH155, may be taken concurrently or MATH160, may be taken concurrently)	5

JUNIOR YEAR - 33 credits (semester; prerequisites)

Fall		Credits
ECE311	Linear Systems Analysis I (F; ECE202 with a minimum grade of C; MATH340 with a minimum grade of C or MATH345 with a minimum grade of C; ECE 331, may be taken concurrently; ECE 341, may be taken concurrently or ECE 451, may be taken concurrently)	3
ECE331	Electronics Principles I (F; ECE202 with a minimum grade of C; MATH340 with a minimum grade of C or MATH345 with a minimum grade of C; PH142 with a minimum grade of C; ECE 311, may be taken concurrently; ECE 341, may be taken concurrently or ECE 451, may be taken concurrently)	4
ECE341	Electromagnetic Fields & Devices I (F; ECE202 with a minimum grade of C; MATH340 with a minimum grade of C or MATH345 with a minimum grade of C; PH142 with a minimum grade of C; ECE 311, may be taken concurrently; ECE 331, may be taken concurrently)	3
PH353	Optics & Waves (F; MATH261; PH142)	4
University Core ^(b)	Foundations & Perspectives (F,S,SS)	3
Spring		
ECE332	Electronic Principles II (S; ECE331 with a minimum grade of C)	4
ECE342	Electromagnetic Fields & Devices II (S; ECE341 with a minimum grade of C)	3
CO301B OR JTC300	Writing in the Disciplines-Sci (F,S; CO150 or HONR193) OR Professional & Technical Communication (F,S,SS; CO150 or HONR193)	3
Elective ^(c)	Science/Math/Engineering elective (F,S,SS)	3
University Core ^(b)	Foundations & Perspectives (F,S,SS)	3

SOPHOMORE YEAR - 31 credits (semester; prerequisites)

Fall		Credits
CHEM111	General Chemistry I (F,S,SS; MATH118 or MATH141 or MATH155 or MATH160 or MATH161 or MATH229 or MATH261; CHEM Prep or CHEM105)	4
ECON202	Microeconomics (F,S,SS; MATH117 or MATH118 or MATH141 or MATH155 or MATH160)	3
MATH261	Calculus for Physical Scientists III (F,S,SS; MATH161)	4
PH142	Physics for Scientists and Engineers II (F,S; PH141; MATH161, may be taken concurrently or MATH255, may be taken concurrently)	5
Spring		
ECE202	Circuit Theory Application (S,SS; ECE103 with a minimum grade of C; MATH161 with a minimum grade of C)	4
ECE/STAT303	Intro to Communications Principles (S; MATH261 with a minimum grade of C; MATH340, may be taken concurrently or MATH345, may be taken concurrently)	3
MATH340 OR MATH345	Intro to Ordinary Differential Equations (F,S,SS; MATH255 or MATH261) OR Differential Equations (F,S; MATH229 or MATH369; MATH255 or MATH261)	4
PH314	Intro to Modern Physics (S; PH 142; MATH261, may be taken concurrently)	4

SENIOR YEAR - 32 credits (semester; prerequisites)

Fall		Credits
ECE401 ^(d)	Senior Design Project I (must be a Lasers & Optics topic) (F,S; ECE312 with a minimum grade of C or (PH353 with a minimum grade of C; PH314 with a minimum grade of C); ECE332 with a minimum grade of C; ECE342 with a minimum grade of C)	3
ECE404	Experimental Optical Electronics (F; concurrent enrollment in ECE441)	2
ECE441	Optical Electronics (F; ECE342 with a minimum grade of C)	3
PH451	Intro to Quantum Mechanics I (F; PH314; MATH340 or MATH345)	3
Technical Electives ^(e)	See Approved List (F,S,SS)	6
Spring		
ECE402	Senior Design Project II (F,S; ECE401)	3
ECE457	Fourier Optics (S; ECE311 with a minimum grade of C; ECE342 with a minimum grade of C)	3
Technical Electives ^(e)	See Approved List (F,S,SS)	6
University Core ^(b)	Foundations & Perspectives (F,S,SS)	3

(a) Intermediate Writing must be completed within the first 60 (CSU and transfer) credits taken

(b) University Core - see Category 3 for explanation: select from categories B, D, or E

(c) Science/Math/Engineering Electives - see list of approved courses on the ECE website:

http://www.engr.colostate.edu/ece/pdfs/current_students/ee_science_math_engineering_technical_electives.pdf

(d) Must have a faculty advisor from Lasers & Optics and be in a L&O related topic

(e) Technical Electives - see list of approved courses on the ECE website: http://www.engr.colostate.edu/ece/pdfs/current_students/lo_technical_electives.pdf**Every 100-, 200-, and 300-level required ECE prefix course must be passed with a minimum grade of C**