

**Sample Electrical and Computer Engineering (ECE) Program
with an Economics (ECON) Minor**

FIRST YEAR	
Fall Semester	Spring Semester
1. ECON 51D (Economic Principles) /WRITING 20	1. WRITING 20/ECON 51D (Economic Principles)
2. CHEM 31L, Core Concepts in Chemistry	2. PHYSICS 61L, Mechanics
3. MATH 31, Calculus I	3. MATH 32, Calculus II
4. EGR 53L, Comp Methods in Engineering	4. ECE 27L, Fundamentals of ECE
SOPHOMORE YEAR	
Fall Semester	Spring Semester
1. COMPSCI 100E, Program Design & Analysis II	1. ECE 51L, Microelectronic Devices & Circuits
2. ECE 52L, Digital Systems	2. ECE 54L, Signals & Systems
3. MATH 103, Intermediate Calculus	3. STA 113, Probability & Statistics
4. PHYSICS 62L, Electricity, Magnetism & Optics	4. ECON 55D, Intermediate Economics I
5. SS-H 1	
JUNIOR YEAR	
Fall Semester	Spring Semester
1. ECE Elective	1. ECE 53L, Electromagnetic Fields
2. ECE Concentration Elective (1)	2. ECE Concentration Elective (2)
3. MATH 107, Linear Algebra & Differential Equations	3. MATH 108, Ordinary & Partial Differential Equations
4. ECON Elective (see NOTES)	4. BIOLOGY 101L, 102L, 144 or 147
5. SS-H 2	
SENIOR YEAR	
Fall Semester	Spring Semester
1. ECE Concentration Elective (3)	1. ECE Concentration Elective (4)
2. ECE Elective or Approved ECE Design Elective	2. Approved ECE Design Elective or ECE Elective
3. ECON Elective (see NOTES)	3. ECON Elective (see NOTES)
4. SS-H 3	4. Free Elective

NOTES:

- **Departmental Requirements for an Economics Minor:** Five courses in Economics, which must include ECON 51D, 55D and three courses at the 100-level or above, excluding ECON 182 and 183. Students who receive AP credit for ECON 51D must take one additional economics course, excluding ECON 2, 2A, 91 and 92. These requirements are reflected in the above sample program. It is suggested that students

wishing to pursue a minor in Economics discuss their specific program with the Director of Undergraduate Studies (DUS) in Economics and with their ECE faculty adviser.

- **AP Assumptions in Sample Program:** This sample program shows one Free Elective (any Duke course counting toward the BSE degree). Additional free electives could result from AP credits or program overload (5 or more courses in a semester). Overload is not recommended for the First Year.
- **SS-H:** Social Sciences & Humanities electives: Because at least two of the five ECON courses are in the Social Sciences (SS) area of knowledge, two of the three remaining required SS-H courses must be distributed among at least two of the three knowledge areas Arts, Literatures, and Performance (ALP); Civilizations (CZ); and Foreign Languages (FL). If appropriate for a student's goals, one or two of those three courses could be ECON courses chosen from the set belong to both SS and CZ areas -- for example, ECON 132, 136, 138, 140 & 150 -- and counted as CZ courses. Up to two of the required SS-H courses could also be met by AP credits.
- Depending upon ECON course choices and AP credits, students might be able to replace one or all of the three SS-H courses shown in this sample program with Free Electives or to reduce the course load in the 5-course semesters. It is strongly recommended that students discuss their selection of upper-level ECON courses with the DUS in Economics.
- **WRITING 20:** University Writing Program, required in first year.
- **CHEM 31L:** AP credit CHEM 19 is also acceptable.
- **PHYSICS 61L & 62L:** Matriculating students who have AP credit for PHYSICS 61L (but not 62L) take PHYSICS 62L; those who have AP credit for PHYSICS 61L and 62L take PHYSICS 63L; and international students who have IPCs for GCE A-level physics take PHYSICS 63L or 143.
- **BIOLOGY 101L, 102L, 144 or 147:** AP credit BIOLOGY 19 is also acceptable.
- **STA 113** is recommended but students may substitute MATH 135 or ECE 255.
- **ECE Concentration Electives:** Four courses selected from the set approved for the ECE program.
- **ECE Elective:** Any ECE course at the 100 level or above except ECE 148L, which may be taken as as a free Elective.
- **ECON Elective:** Any ECON course at the 100 level or above, excluding ECON 182 and 183.
- **Approved Design Elective:** Approved Electrical Engineering Design Elective, required in Junior or Senior year. Currently ECE 123, 135, 154, 164, 251 and 261 are approved. The same course may not be used as a Concentration Elective and count as a required Design Elective or ECE Elective
- **Independent Study in ECE:** Accepted for up to two of the Elective ECE Courses and for any of the Free Electives, but not for any other required course in the ECE Program.