

CHECKLIST OF EE DEGREE REQUIREMENTS

University Degree Requirements (total of 24 credit hours)

- First Year Composition
- Philosophy(2)
- Theology(2)
- Literature – Fine Arts
- Social Sciences
- History

Mathematics (total of 18 credit hours)

- MATH 10550 - Calculus I (4 credits)
- MATH 10560 - Calculus II (4 credits)
- MATH 20550 - Calculus III (3.5 credits)
- MATH 20580 – Introduction to Linear Algebra and Differential Equations (3.5 credits)
- MATH 30650 - Differential Equations (3 credits)

Science (total of 18.5 credit hours)

- CHEM 10171 – Introduction to Chemical Principles (4 credits)
- CHEM 10122 - General Chemistry: Fundamental Principles and Biological Processes (3 credits)
- PHYS 10310 - General Physics I (4 credits)
- PHYS 10320 - General Physics II (4 credits)
- PHYS 20330 - General Physics III (3.5 credits)

Introductory Engineering (total of 6 credit hours)

- EG 10111 – Intro to Engineering Systems I (3 credits)
- EG 10112 – Intro to Engineering Systems II (3 credits)

Engineering Science Elective (total of 3 credit hours)

Electrical Engineering Core (total of 36 credit hours)

- CSE 20221 - Logic Design and Sequential Circuits(4 credits)
- EE 20224 - Introduction to Electrical Engineering (4 credits)
- CSE 20232 – C/C++ Programming (3 credits)
- EE 20234 – Electric Circuits (3 credits)
- EE 20242 - Electronics I (4 credits)
- EE 30344 - Signals & Systems I (3 credits)
- EE 30363 – Random Phenomena in Electrical Engineering (3 credits)
- EE 30347 - Semiconductors I (3 credits)
- EE 30348 - Electromagnetic Fields and Waves I: Fundamentals (3 credits)
- EE 41430 – Senior Design I (3 credits)
- EE 41440 – Senior Design II (3 credits)

Electrical Engineering Electives (total of 18 credit hours)

Technical Electives (total of 6 credit hours)

UNIVERSITY DEGREE REQUIREMENTS

Before registering for Arts & Letters courses for requirements, check Course Attributes on Online Catalog to make sure they satisfy the appropriate categories.

Each student must satisfy the curricular requirements published in the "Bulletin of Information Undergraduate Programs" and meet all additional requirements (including a minimum of 60 credits at Notre Dame) of Article 15 of the Academic code in order to earn a Bachelor of Science degree in the College of Engineering. These include the University (Arts/Letters) Core, Engineering Core and Program Core.

University Core

- **Composition** –FYC 13100, Composition
- **University Seminar*** - An intensive writing course required in First Year. It is offered in a variety of subjects in the humanities. This course may replace any one of the University core courses except FYC 13100 or the second Theology and Philosophy courses
- **Philosophy*** - two courses.
- **Theology*** - two courses.
- **History†*** - one course
- **Social Science†*** - one course
- **Literature/Fine Arts.*** – one course

Only First Year Students may take 100 Level Courses. THEO 100/200 and PHIL 10101/20101 must precede the taking of any other course in these respective areas.

**The University Seminar Course, XXX 180 taken in First Year of Study, may replace any one of the University Core Courses except FYC 110 or the second Theology and Philosophy courses.*

†Students who complete the ROTC program may substitute 3 hours of military science for either the history or the social science requirement.

Electrical Engineering Electives (total of 18 credit hours)

Except for the conditions listed below, any EE or CSE course at or above the junior level that is not required in the student's program applies to this requirement.

-At least one EE elective must be an EE Lab Elective.

-A maximum of 6 credit hours of undergraduate research may be applied toward requirements.

-CSE Jr. and CSE Sr. Service Projects are limited to 3 credit hours of EE Elective.

-EE 30333, Theology and Engineering: Feedback Paradigms, is not acceptable for EE Elective credit if completed after 1 June, 2006.

EE LAB ELECTIVES

- EE 30342 Electronics II
- EE 40446 Integrated Circuit Fabrication Lab
- EE 40453/41453 Communication Systems and Lab
- EE 40455 Control Systems
- EE 40458 Microwave Circuit Design and Measurements Laboratory
- EE 40468 Modern Photonics

FALL ELECTIVES

- EE 40446 Integrated Circuit Fabrication Lab
- EE 40453 Communication Systems
- EE 40455 Control Systems
- EE 40458 Microwave Circuit Design and Measurements
- EE 40462 VLSI Circuit Design
- EE 48499 (Undergraduate Research)
- EE 47006 Circuits and Systems
- EE 47008 Electrical Energy Extraction
- EE 40486 Digital and Analog Integrated Circuits
- Jr./Sr. Level CSE Courses *see above limits*

SPRING ELECTIVES

- EE 30342 Electronics II
- EE 30354 Signals & Systems II
- EE 30357 Semiconductors II
- EE 30358 Electromagnetic Fields & Waves II
- EE 30372 Electric Machinery and Power Systems
- EE 40465 Space Systems and Analysis
- EE 40468 Modern Photonics
- EE 40471 Digital Signal Processing
- EE 47007 Electric Vehicle Engineering
- EE 48499 Undergraduate Research
- Jr./Sr. Level CSE Courses (*see above limits*)

Technical Electives (total of 6 credit hours)

The following is a list of courses pre-approved as EE Technical Electives. Credit for other courses in his category may be granted by approval of your advisor and the Director of Undergraduate Studies. Students who complete the ROTC program may use 3 hours of military science for 3 hours of technical elective.

ENGINEERING:

- Any EE or CSE elective
- Any engineering science elective
- College of Engineering ESTS (Engineering, Science, Technology and Society) Courses
- AME 50595 - Engineering Economy
- AME 54596 - Engineering in the Global Economy
- CE 40650 - Business, Legal and Professional Relations in Engr.
- EG 40421 - Integrated Engineering and Business Fundamentals
- EG 40422 - Advanced Integrated Engineering and Business Concepts
- AME 30591 Failure and Risk in Engineering Systems
- CSE/CE Service Project Courses (6 credit hours maximum apply toward graduation)

BIOLOGY:

- BIOS 20201,20202 - General Biology
- BIOS 20303 - Fundamentals of Genetics
- BIOS 40411 - Biostatistics

CHEMISTRY:

- CHEM 20223,20224 - Elem. Organic Chemistry I & II
- CHEM 20235,20236 - Organic Chemistry M I & II
- CHEM 20243 - Inorganic Chemistry
- CHEM 20247,20248 - Organic Chemistry I & II
- CHEM 40420 - Principles of Biochemistry
- CHEM 40443 - Inorganic Chemistry

MATHEMATICS:

- MATH 20580 - Linear Algebra
- MATH 30210 - Introduction to Operations Research
- MATH 30390 - Introduction to Numerical Methods
- MATH 30540 - Mathematical Statistics
- MATH 30745,30755 - Real Analysis
- MATH 40390 - Numerical Analysis
- MATH 40480 - Complex Variables

PHYSICS:

- PHYS 20455 - Newtonian Mechanics
- PHYS 30405 - Numerical Methods
- PHYS 30471 - Electricity and Magnetism
- PHYS 40371 - Medical Physics

Physics courses which satisfy the University science requirement are not acceptable as Technical electives.

Engineering Science Electives (total of 3 credit hours)

- AME 20221 Mechanics I
- AME 20231 Thermodynamics
- AME 50551 Introduction to Robotics
- CBE 30327 Thermodynamics
- CBE 30361 Science of Engineering Materials
- CBE 40484 Bioprocess Engineering
- CBE 40498 Energy and Climate
- CE 20150 Mechanics I
- CE 20500 Engineering Geology
- ENVG 40360 Geomicrobiology
 - ESTS 40401 or 44401 Energy and Society