

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 (formerly MATH 125) - Calculus I (4 credits)
- MATH 10560 (formerly MATH 126) - Calculus II (4 credits)
- MATH 20550 (formerly MATH 225) - Calculus III (3.5 credits)
- MATH 20580 (formerly MATH 228) – Linear Algebra & Diff. Equations (3.5 credits)
- MATH 30650 (formerly MATH 325) - Diff. Equations (3 credits)

Science (total of 18.5 credit hours)

- CHEM 10121 (formerly CHEM 121) - General Chemistry & Lab Fundamental Principles (4 credits)
- CHEM 10122 (formerly CHEM 122) - General Chemistry Biological Processes (3 credits)
- PHYS 10310 (formerly PHYS 131) - General Physics IM (4 credits)
- PHYS 10320 (formerly PHYS 132) - General Physics IIM (4 credits)
- PHYS 20330 (formerly PHYS 231) - General Physics III (3.5 credits)

Introductory Engineering (total of 6 credit hours)

- EG 10111 (formerly EG 111) – Intro to Engineering Systems I (3 credits)
- EG 10112 (formerly EG 112) – 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 (formerly CSE 221) - Logic Design (4 credits)
- EE 20224 (formerly EE 224) - Intro to EE (New Course - Fall 2001) (4 credits)
- CSE 20232 (formerly CSE 232) - Advanced Programming (3 credits)
- EE 20234 (formerly EE 234) - Circuit Analysis (3 credits)
- EE 20242 (formerly EE 242) - Electronics I (4 credits)
- EE 30344 (formerly EE 344) - Signals & Systems I (3 credits)
- EE 30363 – Random Phenomena in Electrical Engineering (3 credits)
- EE 30347 (formerly EE 347) - Semiconductors I (3 credits)
- EE 30348 (formerly EE 348) - Electromagnetic Fields and Waves I (3 credits)
- EE 41430 (formerly EE 430) - Design I (3 credits)
- EE 41440 (formerly EE 440) - Design II (3 credits)

Electrical Engineering Electives (total of 18 credit hours)

Technical Electives (total of 6 credit hours)

UNIVERSITY DEGREE REQUIREMENTS

Class of 2010 and beyond: 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** – ENGL 110, 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 ENGL 110 or the second Theology and Philosophy courses
- **Philosophy*** - two courses. Either PHIL 10101 or PHIL 20101, and an additional course numbered from 20201 to 20615
- **Theology*** - two courses. Either THEO/RLST+ 100 or 200 and an additional course numbered 201 to 299. Courses numbered in the 300 or 400 series cannot be used to satisfy the University Theology requirement without explicit permission, which will be granted only to students from non-Christian traditions. These courses should be taken at Notre Dame.
- **History†*** - one course. From the offerings of the History Department.
- **Social Science†*** - one course. From the offerings of the Anthropology, Economics (excluding ECON 30330 and ECON 433), Government and International Studies, Psychology (excluding experimental psychology, computer applications and practicum courses) and Sociology Departments (excluding SOC 30902 and SOC 30903).
- **Literature/Fine Arts.*** – one course. From the offerings of the Art, Art History and Design Department; from the three (3) credit course offerings of the Music Department, and from the introductory theater courses offered by the Film, Television, and Theater Department, excluding dance instruction and internship or practicum courses. Studio courses are permitted except for skills courses such as piano lessons, etc. Literature and creative writing courses offered by the English Department (ENGL 20011- 20402, ENGL 40012-40404), the Classical and Oriental Languages Department, the German and Russian Languages Department, and the Romance Languages Department are acceptable. Language skills courses, music organizations and applied music instruction do not satisfy this requirement.

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 (formerly EE 342) Electronics II
- EE 40446 (formerly EE 446) Integrated Circuit Fabrication Lab
- EE 40455 (formerly EE 455) Control Systems
- EE 40458 (formerly EE 458) Microwave Circuit Design and Measurements Laboratory
- EE 40468 (formerly EE 468) Modern Photonics

FALL ELECTIVES

- EE 40446 (formerly EE 446) Integrated Circuit Fabrication Lab
- EE 40453 (formerly EE 453) Communication Systems
- EE 40455 (formerly EE 455) Control Systems
- EE 40458 (formerly EE 458) Microwave Circuit Design and Measurements
- EE 40462 (formerly EE 462) VLSI Circuit Design
- EE 48499 (formerly EE 499) Undergraduate Research
- EE 47006 Circuits and Systems
- EE 47008 Electrical Energy Extraction
- EE 40486 (formerly EE 486) Digital and Analog Integrated Circuits
- Jr./Sr. Level CSE Courses see *above limits*

SPRING ELECTIVES

- EE 30342 (formerly EE 342) Electronics II
- EE 30354 (formerly EE 354) Signals & Systems II
- EE 30357 (formerly EE 357) Semiconductors II
- EE 30358 (formerly EE 358) Electromagnetic Fields & Waves II
- EE 30372 (formerly EE 372) Electric Machinery and Power Systems
- EE 40465 (formerly EE 465) Space Systems and Analysis
- EE 40468 (formerly EE 468) Modern Photonics
- EE 40471 (formerly EE 471) Digital Signal Processing
- EE 47007 (formerly EE 498A and 47000) Electric Vehicle Engineering
- EE 48499 (formerly EE 499) 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 (formerly AME 343) - Engineering Economy
- AME 54596 (formerly AME 345) - Engineering in the Global Economy
- CE 40650 (formerly CE 450) - Business, Legal and Professional Relations in Engr.
- EG 40421 (formerly EG 421) - Integrated Engineering and Business Fundamentals
- EG 40422 (formerly EG 422) - Advanced Integrated Engineering and Business Concepts
- AME 30591 (formerly 498J) Failure and Risk in Engineering Systems
- CSE/CE Service Project Courses (6 credit hours maximum apply toward graduation)

BIOLOGY:

- BIOS 20201,20202 (formerly BIOS 201,202) - General Biology
- BIOS 20303 (formerly BIOS 303) - Fundamentals of Genetics
- BIOS 40411 (formerly BIOS 411) - Biostatistics

CHEMISTRY:

- CHEM 20223,20224 (formerly CHEM 223,224) - Elem. Organic Chemistry I & II
- CHEM 20235,20236 (formerly CHEM 235,236) - Organic Chemistry M I & II
- CHEM 20243 (formerly CHEM 243) - Inorganic Chemistry
- CHEM 20247,20248 (formerly CHEM 247,248) - Organic Chemistry I & II
- CHEM 40420 (formerly CHEM 420) - Principles of Biochemistry
- CHEM 40443 (formerly CHEM 443) - Inorganic Chemistry

MATHEMATICS:

- MATH 20580 (formerly MATH 221) - Linear Algebra
- MATH 30210 (formerly MATH 311) - Introduction to Operations Research
- MATH 30390 (formerly MATH 318) - Introduction to Numerical Methods
- MATH 30540 (formerly MATH 324) - Mathematical Statistics
- MATH 30745,30755 (formerly MATH 335,336) - Real Analysis
- MATH 40390 (formerly MATH 423) - Numerical Analysis
- MATH 40480 (formerly MATH 425) - Complex Variables

PHYSICS:

- PHYS 20455 (formerly PHYS 250) - Newtonian Mechanics
- PHYS 30405 (formerly PHYS 333) - Numerical Methods
- PHYS 30471 (formerly PHYS 356) - Electricity and Magnetism
- PHYS 40371 (formerly PHYS 421) - 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 (formerly AME 225) Mechanics I
- AME 20231 (formerly AME 327) Thermodynamics
- AME 50551 (formerly AME 469) Introduction to Robotics
- CBE 30327 (formerly CHEG 327) Thermodynamics
- CBE 30361 (formerly CHEG 225) Science of Engineering Materials
- CBE 40484 (formerly CHEG 484) Bioprocess Engineering
- CBE 40498 Energy and Climate
- CE 20150 (formerly CE 225) Mechanics I
- CE 20500 (formerly CE 262) Engineering Geology
- ENVG 40360 (formerly ENVG 486) Geomicrobiology
 - ESTS 40401 or 44401 Energy and Society