



Program Planning Guide

University Transfer, Associate in Engineering (A10500)

The Associate in Engineering degree shall be granted for a planned program of study consisting a minimum of 60 semester hours of credit (SHC). Within the degree program students will have the opportunity to demonstrate problem solving ability, effective written communication skills and appropriate mathematical skills.

The degree plan includes required general education and prerequisite courses that are acceptable to all state-funded Bachelor of Engineering programs. Students who follow the degree progression plan will meet the entrance requirements at all North Carolina public Bachelor of Engineering programs, as well as Campbell University. Associate of Engineering graduates may then apply to any of these programs without taking additional and sometimes duplicative courses. *Admission to engineering programs is highly competitive and admission is not guaranteed.*

To be eligible for the transfer of credits under the Associates of Engineering program to the Bachelor of Science in Engineering Articulation Agreement, community college graduates must obtain a grade of "C" or better in each course and an overall GPA of at least 2.5 on a 4.0 scale.

Program Length: 4 semesters

Career Pathway Option: Associate in Engineering Degree, Baccalaureate Degree at a Senior Institution.

Program Sites:

Lee Campus - Day, 1st and 2nd year; Evening, 1st and 2nd year (selected courses)

Selected classes are available on the Chatham and Harnett campuses and via distance education.

Specific course schedule sequences are available for students starting at different levels of MAT 271 (Calculus I) readiness.

| Suggested Course Schedule: 1st Semester (Fall) | | Hours | | | Grade | Semester | Notes |
|---|-------------------------------------|-------|---|-----|-------|----------|--|
| | | C | L | SHC | | | |
| ENG 111 | Writing and Inquiry | 3 | 0 | 3 | | | |
| ACA 122 | College Transfer Success | 0 | 2 | 1 | | | |
| CHM 151 | General Chemistry I | 3 | 3 | 4 | | | |
| ECO 251 | Principals of Microeconomics | 3 | 0 | 3 | | | *MAT 271 prerequisite courses do not count towards the Associate in Engineering degree |
| EGR 150 | Introduction to Engineering | 1 | 2 | 2 | | | |
| | MAT 271 prerequisite* or Humanities | 3 | 0 | 3 | | | |
| | | 13 | 7 | 16 | | | |

| 2nd Semester (Spring) | | Hours | | | Grade | Semester | Notes |
|-----------------------|---|-------|---|-----|-------|----------|-------|
| | | C | L | SHC | | | |
| ENG 112 | Writing and Research in the Disciplines | 3 | 0 | 3 | | | |
| MAT 271** | Calculus I | 3 | 2 | 4 | | | |
| | Fine Arts/Communications | 3 | 0 | 3 | | | |
| | Required Social/Behavioral Science Course | 3 | 0 | 3 | | | |
| | Pre-major Elective | 3 | 3 | 4 | | | |
| | | 15 | 5 | 17 | | | |

**Note: MAT 171 and MAT 172 or their equivalents are prerequisites for MAT 271.

| 3rd Semester (Fall) | | Hours | | | Grade | Semester | Notes |
|---------------------|--------------------|-------|---|-----|-------|----------|-------|
| | | C | L | SHC | | | |
| MAT 272 | Calculus II | 3 | 2 | 4 | | | |
| PHY 251 | General Physics | 3 | 3 | 4 | | | |
| | Pre-major Elective | 3 | 0 | 3 | | | |
| | Pre-major Elective | 3 | 0 | 3 | | | |
| | | 12 | 5 | 14 | | | |

| 4th Semester (Spring) | | Hours | | | Grade | Semester | Notes |
|-----------------------|------------------------|-------|---|-----|-------|----------|-------|
| | | C | L | SHC | | | |
| MAT 273 | Calculus III | 3 | 2 | 4 | | | |
| PHY 252 | General Physics II | 3 | 3 | 4 | | | |
| MAT 285 | Differential Equations | 2 | 2 | 3 | | | |
| | Pre-major Elective | 3 | 0 | 3 | | | |
| | | 11 | 7 | 14 | | | |

Degree total: 60-61 SHC

Course Requirements for Associate in Engineering

I. General Education Requirements (42 hours)

| | | |
|---------------------------------------|---|--------|
| A. English Composition (6 SHC) | | C-L-CR |
| ENG 111 | Writing and Inquiry | 3-0-3 |
| ENG 112 | Writing and Research in the Disciplines | 3-0-3 |

B. Humanities/Fine Arts/Communication (6 SHC) Select one course from each group.

Group 1 (choose 1)

| | | |
|---------|------------------------|-------|
| ENG 231 | American Literature I | 3-0-3 |
| ENG 232 | American Literature II | 3-0-3 |
| ENG 241 | British Literature I | 3-0-3 |
| ENG 242 | British Literature II | 3-0-3 |
| PHI 215 | Philosophical Issues | 3-0-3 |
| PHI 240 | Introduction to Ethics | 3-0-3 |
| REL 110 | World Religions | 3-0-3 |

Group 2 (choose 1)

| | | |
|---------|-----------------------|-------|
| ART 111 | Art Appreciation | 3-0-3 |
| ART 114 | Art History Survey I | 3-0-3 |
| ART 115 | Art History Survey II | 3-0-3 |
| COM 231 | Public Speaking | 3-0-3 |
| MUS 110 | Music Appreciation | 3-0-3 |
| MUS 112 | Introduction to Jazz | 3-0-3 |

C. Social and Behavioral Sciences (6 SHC) Select one course from each group.

Group 1

| | | |
|---------|------------------------------|-------|
| ECO 251 | Principles of Microeconomics | 3-0-3 |
|---------|------------------------------|-------|

Group 2 (choose 1)

| | | |
|---------|---------------------------|-------|
| HIS 111 | World Civilizations I | 3-0-3 |
| HIS 112 | World Civilizations II | 3-0-3 |
| HIS 131 | American History I | 3-0-3 |
| HIS 132 | American History II | 3-0-3 |
| POL 120 | American Government | 3-0-3 |
| PSY 150 | General Psychology | 3-0-3 |
| SOC 210 | Introduction to Sociology | 3-0-3 |

D. Mathematics (12 SHC)

| | | |
|---------|--------------|-------|
| MAT 271 | Calculus I | 3-2-4 |
| MAT 272 | Calculus II | 3-2-4 |
| MAT 273 | Calculus III | 3-2-4 |

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| E. Natural Sciences (12 SHC) | | C-L-CR |
| CHM 151 | General Chemistry I | 3-3-4 |
| PHY 251 | General Physics I | 3-3-4 |
| PHY 252 | General Physics II | 3-3-4 |

II. Other Required Hours (18 SHC)

Required (6 SHC)

| | | |
|---------|--------------------------|-------|
| ACA 122 | College Transfer Success | 0-2-1 |
| EGR 150 | Intro to Engineering | 1-2-2 |
| MAT 285 | Differential Equations | 2-2-3 |

Pre-major Electives: Take at least 12 credits from this list:

| | | |
|---------|-------------------------------|-------|
| BIO 111 | General Biology I | 3-3-4 |
| CHM 152 | General Chemistry II | 3-3-4 |
| CHM 251 | Organic Chemistry I | 3-3-4 |
| CHM 252 | Organic Chemistry II | 3-3-4 |
| COM 110 | Introduction to Communication | 3-0-3 |
| CSC 134 | C++ Programming | 2-3-3 |
| CSC 151 | JAVA Programming | 2-3-3 |
| DFT 170 | Engineering Graphics | 2-2-3 |
| ECO 252 | Principles of Macroeconomics | 3-0-3 |
| EGR 210 | Intro to Elec/Com Eng Lab | 1-3-2 |
| EGR 212 | Logic System Design I | 3-0-3 |
| EGR 214 | Num Methods for Engineers | 3-0-3 |
| EGR 215 | Network Theory | 3-0-3 |
| EGR 216 | Logic and Network Lab | 0-3-1 |
| EGR 220 | Engineering Statics | 3-0-3 |
| EGR 225 | Engineering Dynamics | 3-0-3 |
| EGR 228 | Intro to Solid Mechanics | 3-0-3 |
| GEL 111 | Geology | 3-2-4 |
| HUM 110 | Technology and Society | 3-0-3 |
| MAT 280 | Linear Algebra | 2-2-3 |
| PED 110 | Fit and Well for Life | 1-2-2 |