

pre-ENGINEERING MAJORS (Suggested Associate in Science Degree Curriculum)

This worksheet is designed to help students select courses which are likely to apply to a major in **ENGINEERING**. Some of the majors within the engineering field include: BIOMEDICAL, CHEMICAL, CIVIL, COMPUTER, ELECTRICAL, INDUSTRIAL, and MECHANICAL, as well as ENGINEERING MANAGEMENT and ENGINEERING PHYSICS. These suggested courses satisfy requirements in the Associate in Science Degree program at Prairie State College and provide the basis for transferring to a four-year institution. This program meets the guidelines of the **IAI (Illinois Articulation Initiative) Baccalaureate Major Panel for Engineering**. Students should obtain a copy of the Prairie State College **Associate in Science Degree Worksheet** and should visit the IAI website at www.iTransfer.org for more information.

ACADEMIC PREPARATION: Engineering programs are demanding! A thorough understanding of the basic principles of higher mathematics, chemistry, and physics is necessary. Students planning a pre-engineering program should have taken chemistry, physics, and advanced math in high school. Students who have NOT completed these courses will need to take the basic courses at Prairie State before they can begin the regular engineering course sequences. Engineering programs are highly structured to meet the Accreditation Board for Engineering and Technology (ABET) standards required for registration as a professional engineer. Visit their website at www.abet.org. Students should select courses in consultation with an engineering advisor and should decide on their engineering specialty and their preferred transfer school at the beginning of the sophomore year (at 30 semester credits) since engineering course selections vary by specialty and school. Usually a grade of C or better is required for a course to fulfill a degree requirement. **SINCE ADMISSION IS VERY COMPETITIVE, COMPLETION OF THE COURSES ALONE DOES NOT GUARANTEE ADMISSION TO A UNIVERSITY PROGRAM.**

PLEASE NOTE: Each senior institution has its own transfer policies. Therefore, **we cannot guarantee the accuracy of this information in regard to every individual school.** We strongly urge you to consult the school of your choice and/or the Prairie State College Counseling & Advising Center to discuss the transferability of courses.

SUGGESTED CURRICULUM

TRANSFERABLE GENERAL EDUCATION CORE (39-40 credits)

Area A: Communications (9 credits)

ENG 101 (3)	[C1 900]*	Composition I (<i>Prereq. ENG 099, C or better, or qualifying score on English Placement Test</i>)
ENG 102 (3)	[C1 901R]*	Composition II (<i>Prereq. ENG 101, C or better</i>)
COMM 101(3)	[C2 900]	Principles of Communication (<i>Prereq. Placement in ENG 099 or above</i>)

**Must have a C or better in ENG 101 & 102 to receive credit for the degree.*

Area B: Humanities and Fine Arts (9 credits)

Select three courses with at least one course selected from the humanities area and one course from the fine arts area. Refer to the Associate in Science Degree Worksheet, Area B, for a listing of approved course choices.

Humanities Course (3)	Select any Area B Humanities Course (<i>Prereq. Placement in ENG 099 or above</i>)
Fine Arts Course (3)	Select any Area B Fine Arts Course (<i>Prereq. Placement in ENG 099 or above</i>)
Humanities/Fine Arts Course (3)	Select any Area B Course (<i>Prereq. Placement in ENG 099 or above</i>)

Area C: Mathematics (5 credits)

MATH 171 (5)	[MTH 900-1]	Calculus with Analytic Geometry I (<i>Prereq. MATH 165 with C or better or qualifying score on Math Placement Test</i>)
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Area D: Physical and Life Sciences (7-8 credits)

Select one life science course and one physical science course. One course must have a lab component. Refer to the Associate in Science Degree Worksheet, Area D, for a listing of approved course choices.

PHYSI 210 (4)	[P2 900L]	University Physics I (<i>Prereq. MATH 171 and high school physics</i>)
Life science course (3-4)	Select any Area D Life Science Course (<i>Prereq. Placement in ENG 099 or above</i>)	

Area E: Social and Behavioral Sciences (9 credits)

Select three courses in at least two different disciplines. Refer to the Associate in Science Worksheet, Area E, for a listing of approved course choices.

ECON 201 (3)	[S3 900]	Macroeconomic Principles (<i>Prereq. Placement in ENG 099 or above</i>)
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ECON 202 (3) [S3 902] Microeconomic Principles (Prereq. ECON 201)
Social/Behavioral Sci Course (3) Select any Area E course, other than ECON (Prereq. Placement in ENG 099 or above)

ENGINEERING MAJOR COURSE RECOMMENDATIONS (24-25 credits)

(Check with the school to which you plan to transfer to verify transferability of courses for this major)

Select 22 credits from the “suggested” course recommendations listed below:

Essential IAI engineering prerequisite courses include:

CHEM 110 (5) [EGR 961] General Chemistry I (Prereq. MATH 095 or placement in MATH 151 & h.s. chemistry)
MATH 172 (5) [EGR 902] Calculus with Analytic Geometry II (Prereq. MATH 171)
MATH 173 (5) [EGR 903] Calculus with Analytic Geometry III (Prereq. MATH 172)
MATH 216 (3) [EGR 904] Differential Equations (Prereq. MATH 172)
PHYSI 220 (4) [EGR 912] University Physics II (Prereq. MATH 171)

Suggested IAI engineering speciality courses include:

For Chemical Engineering

CHEM 130 (5) [EGR 962] General Chemistry II (Prereq. CHEM 110 with C or better)
CHEM 203 (5) [EGR 963] Organic Chemistry I (Prereq. CHEM 130 with C or better)
CHEM 204 (5) [EGR 964] Organic Chemistry II (Prereq. CHEM 203 with C or better)

For Civil Engineering

CADMD 245 (3) [EGR 941] Computer Aided Design (Prereq. CADMD 244 & CADMD 201 or 241))
PHYSI 235 (3) [EGR 942] Statics (Prereq. PHYSI 210 or concurrent enrollment)
PHYSI 240 (3) [EGR 943] Dynamics (Prereq. PHYSI 235)

For Computer Engineering Majors

PHYSI 230 (4) [EGR 942] University Physics III (Prereq. MATH 171)

For Electrical Engineering Majors

PHYSI 230 (4) [EGR 942] University Physics III (Prereq. MATH 171)

For Industrial Engineering Majors

PHYSI 235 (3) [EGR 942] Statics (Prereq. PHYSI 210 or concurrent enrollment)
PHYSI 240 (3) [EGR 943] Dynamics (Prereq. PHYSI 235)

Other suggested courses which satisfy the PSC AS degree requirements may include electives such as:

Any additional general education courses selected from Areas B, C, D, or E

Any entry level majors course in a transferable major area

Any foreign language courses*

Up to four credits of physical education courses

Additional courses recommended as transferable by the school to which you plan to transfer.

***Foreign Language Requirement:** Some universities have a foreign language requirement. Generally, four years of a single foreign language in high school, or four semesters of language in college, will fulfill this requirement. It is recommended that students complete the entire sequence at one institution.

MINIMUM OF 62 CREDITS REQUIRED FOR AN ASSOCIATE IN SCIENCE DEGREE

FOR FURTHER INFORMATION CONTACT:

Counseling & Advising Center Room 1190 (708) 709-3506

PHYSICS DEPARTMENT FACULTY

Mohammad Salami, Associate Professor Room 2295 (708) 709-3616 msalami@prairiestate.edu

FOR TRANSFER INFORMATION:

Course Applicability System (CAS): www.transfer.org

Illinois Articulation Initiative (IAI): www.itransfer.org

Links to Articulation Tables for Illinois Colleges: <http://www.itransfer.org/IAI/Other/Articulationlinks.taf>

Visit the web sites of colleges and universities to which you plan to transfer.

FOR CAREER INFORMATION:

Accreditation Board for Engineering and Technology (A.B.E.T.): www.abet.org

Occupational Outlook Handbook, U.S. Department of Labor: <http://www.bls.gov/oco/home.htm>