

Associate in Science Degree

ENGINEERING MAJOR PLANNING SHEET

Joliet Junior College

Student Academic Plan 2018-19 Catalog (Rev. 01/19)

Some requirements have changed from those in previous catalogs.

Name: _____ Student ID#: _____

Major: _____ Transfer School(s): _____

Counselor/Advisor: Laura Cotner

Date of Plan: _____ Catalog Year: _____

EMAIL: lcotner@jjc.edu

Communications 9 hours - Must get "C" grades in ENG 101/102	Social Science 6 hours - Choose 2 - At least 2 areas are required	Humanities & Fine Arts 6 hours - Choose 1 course in Humanities & 1 course in Fine Arts	Math 4 hours -Choose 1 course	Life & Physical Sciences – 7 hours - Choose 1 Life Science & 1 Physical Science -One course must include a lab	Additional Science and Related courses – 17 hours -Must include 1 additional (4 hr.) math and 1 additional science. Remaining courses must be from the approved list in the JJC catalog.
<u>X</u> ENG 101* (3) _____ <u>X</u> ENG 102* (3) _____ <u>X</u> COMM 101* (3) _____ (previously SPCH 101) Total Hours: _____ Developmental Prerequisites <u>Eng 020</u> (3) _____ <u>Eng 021</u> (3) _____ <u>Eng 022</u> (2) _____ <u>Eng 098</u> (3) _____ <u>Eng 099</u> (3) _____ NOTES: <ul style="list-style-type: none"> • An asterisk (*) indicates that the course has a prerequisite or required placement score. • Courses whose IAI number ends with an "N" indicate a course that will meet a non-western course requirement. • Courses whose IAI number ends with a "D" indicate a course that will meet a diversity requirement. (See reverse side for IAI numbers.) Graduation Requirements: <ul style="list-style-type: none"> • 2.0 GPA • 64 or more approved credit hours • 30 hours total or the last 15 hours must be taken at JJC. • Apply to graduate on-line • "0-level" courses do not count for degree 	ANTH 101 (3) _____ ANTH 275 (3) _____ R_ECON 103 (3) _____ ECON 104* (3) _____ GEOG 102* (3) _____ GEOG 104* (3) _____ GEOG 106* (3) _____ HIST 103 (3) _____ HIST 104 (3) _____ HIST 107 (3) _____ HIST 108 (3) _____ HIST 260 (3) _____ HIST 290 (3) _____ PSCI 101 (3) _____ PSCI 102 (3) _____ PSCI 103 (3) _____ PSYC 101 (3) _____ PSYC 208* (3) _____ PSYC 209* (3) _____ PSYC 210* (3) _____ PSYC 215* (3) _____ SOC 101* (3) _____ SOC 220 (3) _____ SOC 270 (3) _____ SOC 280 (3) _____ SOC 290 (3) _____ Total Hours: _____	Humanities ENG 103* (3) _____ ENG 104* (3) _____ ENG 105* (3) _____ ENG 106* (3) _____ ENG 109* (3) _____ ENG 201* (3) _____ ENG 202* (3) _____ ENG 203* (3) _____ ENG 204* (3) _____ ENG 208* (3) _____ ENG 209* (3) _____ ENG 220* (3) _____ ENG 221* (3) _____ ENG 250* (3) _____ ENG 260* (3) _____ ENG 270* (3) _____ HIST 105 (3) _____ HIST 106 (3) _____ HIST 200 (3) _____ PHIL 101* (3) _____ PHIL 102* (3) _____ PHIL 103* (3) _____ PHIL 104* (3) _____ PHIL 105* (3) _____ PHIL 106* (3) _____ SOC 240* (3) _____ FRCH 104* (4) _____ SPAN 104* (4) _____ Fine Arts ART 109 (3) _____ ART 115 (3) _____ ART 116 (3) _____ ART 117 (3) _____ ENG 190 (3) _____ MUS 101 (3) _____ MUS 102 (3) _____ MUS 103 (3) _____ MUS 107 (3) _____ THEA101 (3) _____ Total Hours: _____	<u>X</u> MATH 170* (5) _____ Developmental Prerequisites <u>Math 090</u> (3) _____ <u>Math 094</u> (4) _____ <u>Math 098</u> (4) _____ <u>Math 095</u> (4) _____ Verification of Geometry Prerequisite via HS transcripts, placement testing, or MATH 095 completion is required for Math 123, 124, 131, 138, 142 NOTES: <ul style="list-style-type: none"> • Math 170 may have college-level pre-reqs that are used as electives. • Initial Placement is determined by placement test or other approved standardized tests. • Math hours in this group beyond 4 will carry over as 'Additional Science and Related' courses or electives. Total Hours: _____	Life Sciences (Underlined and italicized is a non-lab course.) <u>BIO 104*</u> (5) _____ <u>BIO 105*</u> (4) _____ <u>BIO 106*</u> (4) _____ <u>BIO 107*</u> (4) _____ <u>BIO 125*</u> (4) _____ <u>BIO 144*</u> (3) _____ <u>R_BIO 146*</u> (3) _____ <u>BIO 149*</u> (4) _____ <u>BIO 151*</u> (5) _____ <u>BIO 152*</u> (5) _____ Physical Sciences <u>CHEM 100*</u> (5) _____ or <u>X_CHEM 101*</u> (5) _____ NOTE: Science hours in this group beyond 7 will carry over as 'Additional Science and Related' courses or electives. <i>Students will generally exceed the number of credits required for the AS degree if they complete all science courses required for junior status after transfer.</i> <i>Students have the option of completing some sequences after transfer.</i> Total Hours: _____	MATH 138* & 139 (4 each) _____ or MATH 142* (5) _____ <i>*Take Math 138, 139, or 142 only if needed based on math placement test scores.</i> <u>X</u> MATH 171* (5) _____ <u>X</u> PHYS 201* (5) _____ <u>X</u> PHYS 202* (5) _____ . <i>Hours in this group beyond 17 will count as general electives.</i> Total Hours: _____ Electives- 15 hours <i>- Most Engineering majors must have math up to 220 and at least 2 semesters of Engineering Physics.</i> <i>- Carry over hours from the Math and Science Columns can be used as electives.</i> <u>CHEM 100*/101*</u> (5) _____ <u>R_PHYS 203*</u> (3) _____ <u>X_MATH 172*</u> (3) _____ <u>X_MATH 220*</u> (3) _____ _____ () _____ _____ () _____ _____ () _____ <i>- Select electives that fulfill the specific science and math sequences related to your engineering discipline and required by your transfer school such as EGR or CHEM classes.</i> Total Hours: _____

NOTES: Courses with an X in front of them indicate a required course; Courses with an R in front of them indicate a recommended (but not required) course.

PLEASE see the ENGINEERING ADVISOR for academic planning and transfer information.

Refer to the reverse side of this sheet for additional important information.

ASSOCIATE IN SCIENCE DEGREE: Illinois Articulation Initiative (IAI) (www.itransfer.org)

JJC is a participant in the IAI - an agreement among Illinois colleges and universities to make the transfer of credits as easy as possible. Currently the IAI allows for the transfer of the General Education Core Curriculum (GECC) among the more than 100 participating public and private colleges and universities. Completion of the GECC at any participating community college in Illinois guarantees that transferring students will be granted equivalent credit for the minimum general education program of the receiving four-year college or university. The 2018-19 AS degree does not fulfill the IAI GECC in the Social Science and Humanities/Fine Arts categories. It is expected that students will complete the remaining 2 courses after transfer.

Category I – Communications (9 hrs.)

ENG 101 - Rhetoric (C1 900)
ENG 102 - Rhetoric (C1 901R)
COMM 101 - Principles of Speech (C2 900)

Category II – Social and Behavioral Science (6 hrs.)

Complete 2 courses from different subject areas.

ANTH 101 - Introduction to Anthropology (S1 900N)
ANTH 275 - Cultural Anthropology (S1 901N)
ECON 103 - Principles of Economics I (S3 901)
ECON 104 - Principles of Economics II (S3 902)
GEOG 102 - World Regional Geography (S4 900N)
GEOG 104 - Introduction to Economic Geography (S4 903N)
GEOG 106 - Cultural Geography (S4 900N)
HIST 103 - History of the United States to 1865 (S2 900)
HIST 104 - History of the United States 1865 to Present (S2 901)
HIST 107 - World History to 1500 (S2 912N)
HIST 108 - World History since 1500 (S2 913N)
HIST 260 - History of the Middle East (S2 918N)
HIST 290 - History of Africa (S2 906N)
PSCI 101 - American National Government (S5 900)
PSCI 102 - American State and Local Government (S5 902)
PSCI 103 - Introduction to Comparative Government (S5 905)
PSYC 101 - General Psychology (S6 900)
PSYC 208 - Social Psychology (S8 900)
PSYC 209 - Child Psychology (S6 903)
PSYC 210 - Child and Adolescent Development (S6 904)
PSYC 215 - Life Span: A survey of Human Development (S6 902)
SOC 101 - Introduction to Sociology (S7 900)
SOC 220 - Sex, Gender, and Power (S7 904D)
SOC 270 - Marriage and the Family (S7 902)
SOC 280 - Sociology of Social Problems (S7 901)
SOC 290 - Cultural Diversity in America (S7 903D)

Category III – Humanities/Fine Arts (6 hrs.)

Select one course from the Humanities list and one course from the Fine Arts list. List continues in the next column.

HUMANITIES

ENG 103 - American Literature (H3 914)
ENG 104 - American Literature (H3 915)
ENG 105 - Survey of English Literature (H3 912)
ENG 106 - Survey of English Literature (H3 913)
ENG 109 - Children's Literature (H3 918)
ENG 201 - Introduction to Poetry (H3 903)
ENG 202 - Introduction to Fiction (H3 901)
ENG 203 - Introduction to Drama (H3 902)
ENG 204 - Introduction to Literature (H3 900)
ENG 208 - Masterpieces of Western Civilization (H3 906)
ENG 209 - Masterpieces of Western Civilization (H3 907)
ENG 220 - Non-Western Literature in Translation (H3 908N)
ENG 221 - Literature of Asia (H3 908N)
ENG 250 - Introduction to Shakespeare (H3 905)

ENG 260 - Minority American Literature (H3 910D)
ENG 270 - Introduction to Women Writers (H3 911D)
FRCH 104 - Intermediate French II (H1 900)
HIST 105 - History of Civilization I (H2 901)
HIST 106 - History of Civilization II (H2 902)
HIST 200 - History of Great Britain since 1688 (H2 908)
PHIL 101 - Introduction to Philosophy (H4 900)
PHIL 102 - History of Philosophy (H4 901)
PHIL 103 - Introduction to Ethics (H4 904)
PHIL 104 - Introduction to Logic/Critical Thinking (H4 906)
PHIL 105 - Contemporary Moral Issues (H4 904)
PHIL 106 - Philosophy of Religion (H4 905)
SOC 240 - Introduction to Comparative Religion (H5 904N)
SPAN 104 - Intermediate Spanish II (H1 900)

FINE ARTS

ART 109 - Introduction to the Visual Arts (F2 900)
ART 115 - Intro to Ancient/Medieval Art (F2 901)
ART 116 - Intro to Renaissance & Baroque Art (F2 902)
ART 117 - Introduction to Modern Art (F2 902)
ENG 190 - Introduction to Film Study (F2 908)
MUS 101 - Exploration of Music Literature (F1 900)
MUS 102 - Exploration of American Music (F1 904)
MUS 103 - Evolution of Jazz (F1 904)
MUS 107 - Music in World Cultures (F1 903N)
THEA 101 - Introduction to Theatre (F1 907)

Category IV – Physical and Life Sciences (7 hrs.)

Must include one life science and one physical science. One course must be a laboratory course.

LIFE SCIENCES

BIO 104 - Biological Diversity (L1 900L)
BIO 105 - Microbes and You (L1 903L)
BIO 106 - Animals and Society (L1 902L)
BIO 107 - Plants and Society (L1 901L)
BIO 125 - Human Biology (L1 904L)
BIO 144 - Introduction to Human Heredity (L1 906)*
BIO 146 - Environmental Biology (L1 905)*
BIO 149 - Principles of Biology (L1 900L)
BIO 151 - General Biology I (L1 910L)
BIO 152 - General Biology II (L1 910L)

PHYSICAL SCIENCES

ASTR 101 - Descriptive Astronomy (P1 906)*
CHEM 100 - Fundamentals of Chemistry (P1 903L)
CHEM 101 - General Chemistry I (P1 902L)
CHEM 104 - Chemistry and Society (P1 903)*
GEOG 111 - Phys. Geography Weather & Climate (P1 909L)
GEOG 112 - Phys. Geography Landforms (P1 909L)
GEOL 101 - Principles of Physical Geology (P1 907L)
PHSCI 125 - Life in the Universe (P9 900)*
PHYS 100 - Basic Physics (P1 900L)
PHYS 110 - Physics of Sound, Music, & Hearing (P1 901L)
PHYS 101 - General Physics I (P1 900L)
PHYS 201 - Engineering Physics 1 (P2 900L)

** Denotes non-lab sciences*

Category V – Mathematics (4 hrs.)

MATH 128 - Elementary Statistics (M1 902)
MATH 137 - Introduction to Discrete Mathematics (M1 905)
MATH 150 - Mathematics Analysis for Business (M1 900B)
MATH 153 - Finite Mathematics (M1 906)
MATH 170 - Calculus with Analytical Geometry I (M1 900I)
MATH 171 - Calculus with Analytical Geometry II (M1 9002)
MATH 172 - Calculus for Analytical Geometry III (M1 9003)

ENGINEERING Majors Information

- Math:** Math 170 is a required prerequisite for Physics 201.
Take the placement test and begin your math classes your first semester at JJC. Your SAT/ACT/GED/HiSET/TASC scores only place you into MATH 138 or 142. In order to start at a higher level in math you must take the ALEKS placement test. Individual, customized study modules are available online after you take the ALEKS test the first time. Study and retest if you did not place as high as you expected on your first testing attempt. Remember, MATH 142 is a refresher/review course for students who already had pre-calculus and trigonometry. It is not intended for students learning the material for the first time.
- Biology:** Engineering majors do not generally need advanced levels of Biology unless you are majoring in Bioengineering. A non-lab Biology such as BIO 146 is recommended
- Chemistry:** Most engineering majors will be expected to take CHEM 101. If you did not have Chemistry in high school, you will also need to take CHEM 100 prior to 101.
- Physics:** Engineering majors must take Engineering Physics, which is calculus based. Note the math prerequisites for the Physics sequence as described in the course catalog.
- Grades:** The transfer options available for engineering majors are typically very competitive, so good grades are important.
- Load:** To get a good grade (A or B) in science and math classes, you will need to spend a lot of time studying outside of class. A student can expect to spend 2-3 hours outside of class studying for every hour in class.
- For example:**
PHYS 201: 5 credits & 7 contact hours = **Total Time** of 21-28 hours a week.
CHEM 101: 5 credits & 7 contact hours = **Total Time** of 21-28 hours a week.

To maintain a competitive grade point average, some students will require more than two (2) years to complete general education requirements that include the math and science sequences.

We also encourage you to utilize the following JJC resources:

Testing Services: <https://www.jjc.edu/student-resources/testing-services>.

Career Services: www.jjc.edu/info/careers

Counseling/Advising: <http://www.jjc.edu/student-resources/counseling>

Transfer Information: <http://www.jjc.edu/getting-started/admissions/transfer-information>

SUGGESTED SEMESTER BY SEMESTER SEQUENCE

ENGINEERING	YEAR 1 FALL		YEAR 1 SPRING		YEAR 2 FALL		YEAR 2 SPRING	
	Course	Hours	Course	Hours	Course	Hours	Course	Hours
	MATH 170	5	MATH 171	4	MATH 172	4	MATH 220	3
	CHEM 101	5	PHYS 201	5	PHYS 202	5	ELECTIVE(s)	5
	ENG 101	3	ENG 102	3	COMM 101	3	GE 3	3
	EGR 101	4	GE1	3	GE 2	3	GE 4	3
							BIO	3
	TOTAL	17	TOTAL	15		15		17

GE: Gen Ed – 4 classes required: Social Science (2), Humanities (1), Fine Arts (1):

NOTES:

- The suggested course sequences shown are for the student that places directly into MATH 170 Calculus I. If prerequisite MATH courses are required, the sequence must be modified to accommodate the additional courses as well as Physics courses. Student must complete MATH 170 prior to starting the Physics sequence.
- Check prerequisites for CHEM 101 for Math and English placement and CHEM 100 or HS chemistry.
- GE courses can be taken in any semester, in any order.
- The summer semesters can be utilized to progress the math sequence if necessary.
- The summer semesters may also be utilized for GE courses to reduce the number of semester credit hours in fall and/or spring.
- See the academic advisor to customize your engineering pathway.