

# ASSOCIATE IN ENGINEERING SCIENCE DEGREE

## Degree Requirements

(Total Minimum Credits Required: 68)

Students should check with an Engineering advisor at College of DuPage and consult the Transfer Guide at <http://www.cod.edu/programs/engineering/transfer.aspx>.

Each candidate for an Associate in Engineering Science (A.E.S.) degree shall:

1. Select courses to complete the required credits from:
  - a. general education core requirement courses,
  - b. essential prerequisite courses,
  - c. engineering specialty courses, and
  - d. elective courses

to a minimum of 68 credits.

2. **General Education Core Courses** - 9 to 18 credits.

- a. **Communication** - 6 credits

Written (6 credits) English 1101 (C1 900) and 1102 (C1 901R)  
(Grade of "C" or higher required in both courses)

- b. **Humanities and Fine Arts** - 0 to 9 credits

Code	Title	Credits
<b>Humanities</b>		
<i>Chinese</i>		
CHINE 2202	Intermediate Chinese II (H1 900)	4
<i>English</i>		
ENGLI 1130	Introduction to Literature (H3 900)	3
ENGLI 1150	Short Fiction (H3 901)	3
ENGLI 1151	Novel (H3 901)	3
ENGLI 1152	Poetry (H3 903)	3
ENGLI 1153	Drama (H3 902)	3
ENGLI 1154	Film As Literature (HF 908) <sup>1</sup>	3
ENGLI 1158	Bible As Literature (H5 901)	3
ENGLI 1159	Greek Mythology (H9 901)	3
ENGLI 1160	Native American Literature (H3 910D)	3
ENGLI 1161	Multicultural Literatures of the U.S. (H3 910D)	3
ENGLI 1165	Literature, Gender, and Sexualities (H3 911D)	3
ENGLI 2220	British Literature to 1800 (H3 912)	3
ENGLI 2221	British Literature From 1800 Through The Present (H3 913)	3
ENGLI 2223	American Literature From the Colonial Period to the Civil War (H3 914)	3
ENGLI 2224	American Literature From the Civil War to the Present (H3 915)	3
ENGLI 2226	World Literature (H3 907)	3
ENGLI 2227	Modern European Literature (H3 907)	3
ENGLI 2228	Shakespeare (H3 905)	3
ENGLI 2262	Non-Western Literature (H3 908N)	3
<i>French</i>		

FRENC 2202	Intermediate French II (H1 900)	4
FRENC 2251	Conversation and Composition I (H1 900)	3
FRENC 2252	Conversation and Composition II (H1 900)	3

### *German*

GERMA 2202	Intermediate German II (H1 900)	4
GERMA 2251	Conversation and Composition I (H1 900)	3
GERMA 2252	Conversation and Composition II (H1 900)	3

### *History*

HISTO 1110	Foundations of the European World (H2 901)	3
HISTO 1120	Europe in the Modern World (H2 902)	3
HISTO 1160	World Civilization Since 1300 (H2 907)	3
HISTO 2205	History of Asia (H2 903N)	3
HISTO 2220	History and Culture of China (H2 903N)	3
HISTO 2225	History and Culture of Russia (H2 908)	3
HISTO 2230	History and Culture of Japan (H2 908)	3
HISTO 2235	20th Century World History (H2 903N)	3

### *Humanities*

HUMNT 1102	Introduction to Humanities: Ideas and Values (H9 900)	3
HUMNT 1103	Introduction to World Mythology (H9 901)	3
HUMNT 1104	Women in Arts: Cultural and Artistic Expressions of Gender (HF 907D)	3
HUMNT 1105	Humanities Beyond the U.S. & Europe (HF 904N) <sup>1</sup>	3
HUMNT 1110	The Arts and Cultural Diversity (HF 906D) <sup>1</sup>	3
HUMNT 1120	Introduction to Medical Humanities (H9 900)	3
HUMNT 1150	Intersections of Humanities, Math, And Science (H9 900)	3

### *Italian*

ITALI 2202	Intermediate Italian II (H1 900)	4
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### *Japanese*

JAPAN 2202	Intermediate Japanese II (H1 900)	4
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### *Korean*

KOREA 2202	Intermediate Korean II (H1 900)	4
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### *Philosophy*

PHILO 1100	Introduction to Philosophy (H4 900)	3
PHILO 1110	Ethics (H4 904)	3
PHILO 1116	Environmental Ethics (H4 904)	3
PHILO 1120	Logic (H4 906)	3
PHILO 1125	Critical Thinking (H4 906)	3
PHILO 1150	World Religions (H5 904N)	3
PHILO 2010	Ancient Philosophy (H4 901)	3
PHILO 2011	Early Modern Philosophy (H4 902)	3
PHILO 2150	Philosophy of Religion (H4 905)	3

### *Religious Studies*

RELIG 1100	Introduction to Religion (H5 900)	3
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RELIG 1110	Introduction to the Bible (old Testament) (H5 901)	3
RELIG 1120	Introduction to the Bible (New Testament) (H5 901)	3
RELIG 1150	World Religions (H5 904N)	3
RELIG 2155	Asian Thought	3
RELIG 2160	Judaism, Christianity and Islam (H5 901)	3
<b>Russian</b>		
RUSSE 2202	Intermediate Russian II (H1 900)	4
<b>Spanish</b>		
SPANI 2202	Intermediate Spanish II (H1 900)	4
SPANI 2206	Spanish for Heritage Speakers I (H1 900)	4
SPANI 2208	Spanish for Heritage Speakers II (H1 900)	4
SPANI 2251	Conversation and Composition I (H1 900)	3
SPANI 2252	Conversation and Composition II (H1 900)	3
<b>Fine Arts</b>		
<b>Art</b>		
ART 1100	Introduction to Visual Art and Culture (F2 900)	3
ART 2211	Art Histories Before 1400 CE (F2 901)	3
ART 2212	Art Histories 1400 to 1950 (F2 902)	3
ART 2213	Art Histories Since 1950 (F2 902)	3
ART 2214	Non-Western Art (F2 903N)	3
<b>English</b>		
ENGLI 1135	Introduction to Film Art (F2 908)	3
ENGLI 1154	Film As Literature (HF 908) <sup>1</sup>	3
<b>Humanities</b>		
HUMNT 1101	Introduction to Humanities: The Arts (F9 900)	3
HUMNT 1104	Women in Arts: Cultural and Artistic Expressions of Gender (HF 907D)	3
HUMNT 1105	Humanities Beyond the U.S. & Europe (HF 904N) <sup>1</sup>	3
HUMNT 1110	The Arts and Cultural Diversity (HF 906D) <sup>1</sup>	3
<b>Music</b>		
MUSIC 1100	Music Appreciation (F1 900)	3
MUSIC 1104	Introduction to American Music (F1 904)	3
MUSIC 1115	Introduction to World Music (F1 903N)	3
<b>Theater</b>		
THEAT 1100	Theater Appreciation (F1 907)	3

Interdisciplinary credit may be earned as either Fine Arts or Humanities.

c. **Social and Behavioral Sciences** - 0 to 9 credits

Code	Title	Credits
<b>Anthropology</b>		
ANTHR 1000	Introduction to Anthropology (S1 900N)	3
ANTHR 1100	Cultural Anthropology (S1 901N)	3
ANTHR 1105	Practical Anthropology (S1 904D)	3
ANTHR 1130	People and Cultures of the World (S1 904D)	3
ANTHR 1200	Discovering Archaeology (S1 903)	3
ANTHR 1400	Race, Sex and Human Evolution (S1 902)	3
<b>Economics</b>		
ECONO 2200	Principles of Economics (S3 900)	3
ECONO 2201	Macroeconomics and the Global Economy (S3 901)	3
ECONO 2202	Microeconomics and the Global Economy (S3 902)	3
<b>Geography</b>		
GEOGR 1100	Western World Geography (S4 901)	3
GEOGR 1105	Eastern World Geography (S4 902N)	3
GEOGR 1120	Economic Geography (S4 903N)	3
GEOGR 1130	Cultural Geography (S4 900N)	3
GEOGR 1140	Urban Geography (S4 901)	3
<b>History</b>		
HISTO 1130	History of the United States to 1865 (S2 900)	3
HISTO 1140	History of the United States Since 1865 (S2 901)	3
HISTO 2210	History and Culture of Africa (S2 907N)	3
HISTO 2215	History and Culture of South Asia (S2 916N)	3
HISTO 2260	United States History Since 1945 (S2 901)	3
<b>Political Science</b>		
POLS 1100	Introduction to Political Science (S5 903)	3
POLS 1101	American Politics (S5 900)	3
POLS 1105	State and Local Politics (S5 902)	3
POLS 2203	Comparative Politics (S5 905)	3
POLS 2220	World Politics (S5 904N)	3
<b>Psychology</b>		
PSYCH 1100	General Psychology (S6 900)	3
PSYCH 2230	Developmental Psychology: Childhood and Adolescence (S6 903)	3
PSYCH 2233	Developmental Psychology: Adolescence (S6 904)	3
PSYCH 2235	Developmental Psychology: Adulthood (S6 905)	3
PSYCH 2237	Developmental Psychology: The Life Span (S6 902)	3
PSYCH 2240	Social Psychology (S8 900)	3
<b>Sociology</b>		
SOCIO 1100	Introduction to Sociology (S7 900)	3

SOCIO 1120	Sociology of Sex, Gender and Power (S7 904D)	3
SOCIO 2210	Social Problems (S7 901)	3
SOCIO 2215	Racial and Ethnic Relations (S7 903D)	3
SOCIO 2220	Sexual Relationships, Marriage & Family (S7 902)	3

### 3. Essential Prerequisite Courses - 36 to 40 credits

#### a. Mathematics - 18 credits

Code	Title	Credits
MATH 2231	Calculus and Analytic Geometry I (M1 900-1)	5
MATH 2232	Calculus and Analytic Geometry II (M1 900-2)	5
MATH 2233	Calculus and Analytic Geometry III (M1 900-3)	4
MATH 2270	Differential Equations	4

#### b. Chemistry - 5 credits

Code	Title	Credits
CHEMI 1551	Principles of Chemistry I (P1 902L)	5

#### c. Physics - 10 credits

Code	Title	Credits
PHYSI 2111	Physics for Science and Engineering I (P2 900L)	5
PHYSI 2112	Physics for Science and Engineering II	5

#### d. Optional:

Code	Title	Credits
PHYSI 2115	Physics for Science and Engineering III (0 or 4 credits)	4

#### e. Computer Information Systems - 3 to 4 credits

Code	Title	Credits
CIS 2485	C++ for Science and Engineering	3
CIS 2541	C++ Language Programming	4

### 4. Engineering Specialty Courses - 8 to 23 credits

Code	Title	Credits
<b>Engineering</b>		
ENGIN 1101	Engineering Graphics and Design	3
ENGIN 2201	Statics	3
ENGIN 2202	Dynamics	3
ENGIN 2203	Mechanics of Materials	3
ENGIN 2205	Engineering Thermodynamics	3
ENGIN 2207	Engineering Economy	3
ENGIN 2210	Circuit Analysis I	4
ENGIN 2213	Introduction to Digital Systems	4
ENGIN 2220	Circuit Analysis II	4
ENGIN 2223	Microcontrollers	4
<b>Other Sciences</b>		
<i>Biology</i>		
BIOLO 1151	Principles of Biological Science (L1 910L)	5

*Chemistry*

CHEMI 1552	Principles of Chemistry II	5
CHEMI 2551	Organic Chemistry I	5
CHEMI 2552	Organic Chemistry II	5

- Select remaining elective courses from IAI General Education, Essential Prerequisite Courses and Engineering Specialty Courses to 68 credits.
- Satisfy graduation requirements (<https://catalog.cod.edu/educational-opportunities/#gradreqs>) for all associate degrees.
- Earn no credit with a satisfactory/fail grade option.
- Earn no more than 42 credits for the Communication, Physical and Life Sciences, Mathematics, Humanities and Fine Arts, and Social and Behavioral Sciences categories by demonstrated competence through the Advanced Placement Program (AP), designated course-specific subject examinations of the College Level Examination Program (CLEP), and the College of DuPage Proficiency Through an Instructor Program.

*Notes:* Courses listed under Essential Prerequisite Courses and Engineering Specialty Courses, as well as the A.E.S. degree, will transfer from COD based on criteria set by each baccalaureate degree-granting institution. Check with an advisor at College of DuPage and your transfer institution for the appropriate choices in Humanities, Social and Behavioral Sciences, and Fine Arts for transfer to a chosen program of study.

Biology may be required for Bio-Engineering majors. See a Student Success Counselor for help in choosing the correct biology course.