**Computer Science**

**Associate in Science**  
Plan 11AB  
Engineering, Math and Physical Sciences Division  
Room T302, (847) 543-2044

This program is **recommended** for students pursuing a B.S. or B.A. in Computer Science with a math or liberal arts focus. The following courses are recommended for students who have not decided on a specific four year college or university. Once a transfer school is selected, students should meet with a Student Development Counselor or advisor to determine which CLC courses will also meet transfer requirements. Four year schools offering a B.S. or B.A. in Computer Science with a math or liberal arts focus include Loyola, DePaul, Elmhurst, University of Illinois at Urbana-Champaign (UIUC College of Liberal Arts and Sciences) Northern Illinois University (NIU), University of Wisconsin Parkside and Northeastern Illinois University.

To complete any transfer degree, students should select from the general education requirements outlined on page 54. All course prerequisites should be met. Additionally, students are required to select one course from the International/Multicultural list on page 55 to meet graduation requirements.

Students desiring a B.S. in Computer Science with an engineering focus may want to pursue the program of study recommended under Engineering and Computer Science (Associates of Engineering Science) on page 88.

### First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MCS 141</td>
<td>Computer Science I</td>
<td>4</td>
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<tr>
<td>MTH 144</td>
<td>Precalculus</td>
<td>5</td>
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<tr>
<td>ENG 121</td>
<td>English Composition I</td>
<td>3</td>
</tr>
<tr>
<td>HUM 127</td>
<td>Critical Thinking or PHI 122</td>
<td>3</td>
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### Second Semester

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<th>Course</th>
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<tr>
<td>MCS 142</td>
<td>Computer Science II</td>
<td>3</td>
</tr>
<tr>
<td>MTH 145</td>
<td>Calculus and Analytic Geometry I</td>
<td>5</td>
</tr>
<tr>
<td>ENG 122</td>
<td>English Composition II or ENG 126</td>
<td>3</td>
</tr>
<tr>
<td>Social &amp; Behavioral Sciences Elective</td>
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### Third Semester

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<td>MCS 240</td>
<td>Computer Organization and Architecture</td>
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</tr>
<tr>
<td>MTH 146</td>
<td>Calculus and Analytic Geometry II</td>
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<tr>
<td>PHY 123</td>
<td>Physics for Science and Engineering I</td>
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</tr>
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<td>CMM 121</td>
<td>Fundamentals of Speech</td>
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### Fourth Semester

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<tr>
<td>BIO 120</td>
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<tr>
<td>BIO 161</td>
<td>General Biology I</td>
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<tr>
<td>MTH 244</td>
<td>Discrete Mathematics</td>
<td>3</td>
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<tr>
<td>Fine Arts Elective</td>
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<tr>
<td>Humanities or Fine Arts Elective</td>
<td>3</td>
<td></td>
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<tr>
<td>Social and Behavioral Sciences Elective</td>
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</tbody>
</table>

For more information on recommended courses or program specific advising, contact the following faculty or the Engineering, Math and Physical Science Division at (847) 543-2044.

Shyam Kurup / Scott Reed / John Sprague

Courses listed are **recommended** for students who have not decided upon a specific four-year college or university in which to transfer. Students are strongly encouraged to meet with a Student Development Counselor or advisor to identify coursework that will meet both CLC and transfer requirements. See page 54 for College Requirements.
Associate in Science (11AB)

The Associate in Science degree is designed to parallel the first two years of a science-related baccalaureate degree program. Students complete freshman and sophomore level courses for majors in such areas as biology, chemistry, physics and related professional fields. Since differences in course requirements exist at different universities and in different science disciplines within the same university, it is important that students work closely with a CLC student development counselor and their transfer school to choose appropriate courses. Completion of the A.S. degree does not fulfill the requirements of the Illinois Articulation Initiative General Education Core Curriculum (IAI GECC). Many science majors are highly structured and require extensive sequential lower-division mathematics and science courses. In order to take courses required for the major in a similar pattern to those of the freshman and sophomore students at a university, some general education courses are postponed until after transfer. Students then either complete the general education requirements of the transfer institution or are given the opportunity to complete the IAI.

Communication - 9 credit hours

A grade of C or better is required for both ENG courses.

☐ CMM 121 Fundamentals of Speech (3) C2 900
☐ ENG 121 English Composition I (3) C1 900
☐ ENG 122 English Composition II (3) C1 901 R or
☐ ENG 126 Advanced Composition: Scientific and Technical Communications (3) C1 901 R

Social and Behavioral Science - 6 credit hours

Select courses from at least two different disciplines i.e. different prefixes.

☐ ANT 121+ Introduction to Anthropology (3) S1 900N
☐ ANT 221+ Cultural Anthropology (3) S1 901N
☐ ANT 222 Introduction to Physical Anthropology (3) S1 902
☐ ANT 224 Introduction to Archaeology (3) S1 903
☐ ANT 228+ Cross-Cultural Relationships (3) S1 904D
☐ ECO 221 Principles of Macroeconomics (3) S3 901
☐ ECO 222 Principles of Microeconomics (3) S3 902
☐ GEG 122 Cultural Geography (3) S4 900N
☐ GEG 123 World Regional Geography (3) S4 900N
☐ GXS 121+ Introduction to Gender Studies (3) S9 900
☐ GXS 229+ Sex, Gender, and Power (3) S7 904D
☐ HST 121 History of Western Civilization I (3) S2 902
☐ HST 122 History of Western Civilization II (3) S2 903
☐ HST 126+ History of Contemporary Non-Western Civilization (3) S2 905N
☐ HST 127+ History of Chinese Culture and Society (3) S2 920N
☐ HST 221 United States History to 1876 (3) S2 900
☐ HST 222 United States History 1876 to Present (3) S2 901
☐ HST 245+ History of Latin America to 1825 (3) S2 920N
☐ HST 246+ History of Latin America from 1825 (3) S2 920N
☐ PSC 121 American National Politics (3) S5 900
☐ PSC 122 State and Local Politics (3) S5 902
☐ PSC 221+ Comparative Political Systems (3) S5 905
☐ PSC 222+ International Relations (3) S5 904N
☐ PSY 121 Introduction to Psychology (3) S6 900
☐ PSY 220 Lifespan Development (3) S6 902
☐ PSY 222 Child Growth and Development (3) S6 903
☐ PSY 225 Social Psychology (3) S8 900
☐ PSY 226 Adolescent Psychology (3) S6 904
☐ SOC 121 Introduction to Sociology (3) S7 900
☐ SOC 222 Social Problems (3) S7 901
☐ SOC 224 Sociology of the Family (3) S7 902
☐ SOC 225+ Class, Race, and Gender (3) S7 903D
☐ SOC 229+ Sex, Gender, and Power (3) S7 904D

Physical and Life Sciences - 11 credit hours

One course must be selected from Physical Science and one course from Life Science. Both courses must be IAI and laboratory science courses (L). A third course should be selected from the Physical Science course list or the Life Science course list or the Additional Science course list.

Physical Science

☐ CHM 120L (LAB) Chemical Concepts (4) P1 902L
☐ CHM 121L (LAB) General Chemistry I (5) P1 902L
☐ CHM 142L (LAB) Chemistry for a Changing World (4) P1 903L
☐ ESC 120L (LAB) Earth Science (4) P1 905L
☐ ESC 121L (LAB) Physical Geology (4) P1 907L
☐ ESC 127L (LAB) Introduction to Meteorology (4) P1 905L
☐ ESC 140L (LAB) Introduction to Astronomy (4) P1 906L
☐ GEG 120L (LAB) Physical Geography (4) P1 909L
☐ PHY 120L (LAB) Practical Aspects of Physics (4) P1 901L
☐ PHY 121L (LAB) General Physics I (5) P1 900L
☐ PHY 123L (LAB) Physics for Science and Engineering I (5) P2 900L

Life Science

☐ BIO 120L (LAB) Environmental Biology (4) L1 905L
☐ BIO 123L (LAB) Principles of Biology (4) L1 900L
☐ BIO 141L (LAB) Concepts of Biology (4) L1 900L
☐ BIO 161L (LAB) General Biology I (4) L1 910L

Additional Science Course List

☐ Any BIO, CHM, ESC, GEG, HRT or PHY course with a 1.1 PCS code, excluding GEG 122 and GEG 123. The PCS code for each course is listed in the course descriptions starting on page 232 of this catalog.

Mathematics - 7 credit hours

One course MUST be selected from the courses with an IAI number (shown in bold) in order to meet CLC graduation requirements.

☐ MTH 121 Mathematics for Elementary Teaching (3)
☐ MTH 122 College Algebra (4)
☐ MTH 123 Trigonometry (3)
☐ MTH 127 Finite Mathematics I (3) M1 906
☐ MTH 144 Precalculus (5)
☐ MTH 145 Calculus and Analytic Geometry I (5) M1 900-1
☐ MTH 146 Calculus and Analytic Geometry II (4) M1 900-2
☐ MTH 221 Math for Elementary Teaching II (3) M1 903
☐ MTH 222 Business Statistics (4) M1 902
☐ MTH 224 Calculus for Business and Social Science (4) M1 900B
☐ MTH 227 Ordinary Differential Equations (4)
At least one course must be selected from the Humanities section and one course from the Fine Arts section.

Humanities

- **ARA** 222+ Intermediate Modern Standard Arabic II (4) H1 900
- **CHI** 222+ Intermediate Chinese II (4) H1 900
- **ENG** 129+ Women in Literature (3) H3 911D
- **ENG** 223 Early American Literature (3) H3 914
- **ENG** 225 Survey of British Literature I (3) H3 912
- **ENG** 226 Survey of British Literature II (3) H3 913
- **ENG** 227 Introduction to Shakespeare (3) H3 905
- **ENG** 228+ World Literature (3) H3 906
- **ENG** 229 20th Century American Literature (3) H3 915
- **ENG** 241 Introduction to Poetry (3) H3 903
- **ENG** 243 Introduction to Fiction (3) H3 901
- **ENG** 244+ Mythology and Fairy Tales (3) H9 901
- **ENG** 246+ Latin American Writers (3) H3 908N
- **ENG** 247+ International Women Writers (3) H3 911D
- **ENG** 249 Children’s Literature (3) H3 918
- **FRN** 222+ Intermediate French II (4) H1 900
- **FRN** 223 French Civilization I (3) H1 900
- **FRN** 224 French Civilization II (3) H1 900
- **GER** 222+ Intermediate German II (4) H1 900
- **GER** 224 German Civilization II (3) H1 900
- **HUM** 121+ Humanities: Ancient Times to the Middle Ages (3) HF 902
- **HUM** 122+ Humanities: Renaissance to the Present (3) HF 903
- **HUM** 127 Critical Thinking (3) H4 906
- **HUM** 128+ Introduction to Middle-Eastern Civilizations (3) H2 903 N
- **HUM** 129+ Introduction to East Asian Civilization (3) HF 904N
- **HUM** 141+ World Humanities 20/21 Century (3) HF 904N
- **HUM** 221+ American Decades (3) HF 906D
- **HUM** 226+ Women and the Arts (3) HF 907D
- **ITAL** 222+ Intermediate Italian II (4) H1 900
- **ITAL** 223 Italian Civilization I (3) H1 900
- **JPN** 222+ Intermediate Japanese II (4) H1 900
- **LAT** 121 Introduction to Latin-American Studies (3) HF 906D
- **PHI** 121+ Introduction to Philosophy (3) H4 900
- **PHI** 122 Logic (3) H4 906
- **PHI** 123 Philosophy of Religion (3) H4 905
- **PHI** 125+ Introduction to Ethics (3) H4 904
- **PHI** 126+ World Religions (3) H5 904N
- **PHI** 128 Introduction to Social and Political Philosophy (3) H4 907
- **PHI** 221+ Asian Philosophy (3) H4 903N
- **RUS** 222+ Intermediate Russian II (4) H1 900
- **SPA** 222+ Advanced Spanish II (4) H1 900
- **SPA** 223+ Spanish Civilization I (3) H1 900
- **SPA** 224+ Spanish Civilization II (3) H1 900

Fine Arts

- **ART** 121 Introduction to Art (3) F2 900
- **ART** 240+ History of Art I (3) F2 901
- **ART** 241+ History of Art II (3) F2 902
- **ART** 260 History of Photography (3) F2 904
- **ART** 261+ Non-Western Art History (3) F2 903N
- **DNC** 240+ The Art of Dance (3) F1 906
- **HUM** 121+ Humanities: Ancient Times to the Middle Ages (3) HF 902
- **HUM** 122+ Humanities: Renaissance to the Present (3) HF 903

- **HUM** 123+ Introduction to Film (3) F2 908
- **HUM** 126+ Introduction to the Performing Arts (3) F9 900
- **HUM** 129+ Introduction to East Asian Civilization (3) HF 904N
- **HUM** 140+ Introduction to International Film (3) F2 909
- **HUM** 141+ World Humanities 20/21 Century (3) HF 904N
- **HUM** 221+ American Decades (3) HF 906D
- **HUM** 222 Film and Society (3) F2 908
- **HUM** 226+ Women and the Arts (3) HF 907D
- **MUS** 124 Music Appreciation (3) F1 900
- **MUS** 224 Music Literature (3) F1 902
- **THE** 121 Introduction to Theatre I (3) F1 907
- **THE** 123+ Diversity in American Theatre (3) F1 909D

**International/Multicultural Requirement**

Include one course in International/Multicultural Education which must be taken from the catalog. Refer to page 55. Courses with + fulfill this requirement.

**Area of Concentration/Elective Requirements - 21 credit hours**

- Choose elective courses with a 1.1 (transfer course) PCS code that relate to your intended major. Students should choose electives only after consulting with an Advising Professional. The PCS code for each course is listed in the course descriptions starting on page 224 of this catalog.

- **Exception:** Up to six hours of courses with a 1.2 (career course) PCS code may be used as general electives in the degree. All 199 courses are exempt from this rule. Students should select these courses only after they have verified their transferability with their Advising Professional or the transfer institution. EDU 999 does not count toward this six-hour limit.

- Students may not receive credit towards degree for both CHM 140 and CHM 142, or both BIO 120 and BIO 140, or both ESC 123 and ESC 127.

- Students with credit for both MTH 122 and MTH 123 will not be given credit for MTH 144. Students may not receive credit towards degree for both (MTH 122 and MTH 144) or (MTH 123 and MTH 144).

- Please review lists of recommended courses for individual programs of study listed on pages 70-120 in this catalog.

- **______________________**

- **______________________**

- **______________________**

**Total A.S. Degree Requirements - 60 credit hours**

**Other Graduation Requirements**

- Cumulative CLC GPA of 2.00 or higher
- Completion of at least 15 credit hours at CLC
- **Petition to Graduate:** The Petition to Graduate form must be submitted to the Welcome and One-Stop Center to have your degree processed. It can be found online at [www.clcillinois.edu/petition](http://www.clcillinois.edu/petition). Contact Admissions for more information at (847) 543-2061.