

**Northern Illinois University**  
**Engineering**  
**McHenry County College Transfer Guide**  
(2019-2020 catalog)

College of Engineering and Engineering Technology  
Northern Illinois University  
DeKalb, IL 60115  
<http://www.niu.edu/CEET/>

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**Transfer guides are produced as a service to MCC students. Every effort is made to maintain up-to-date and accurate information; however, this information is subject to change. Such changes take precedence over the information on this guide. Students should work with an MCC advisor and check with the four-year school as soon as the transfer decision is made. Responsibility for complying with all applicable requirements ultimately rests with the student.**

NIU's College of Engineering and Engineering Technology (CEET) offers engineering and engineering technology programs accredited through Accreditation Board for Engineering and Technology (ABET). This transfer guide provides admission and prerequisite course information for the following NIU engineering programs: electrical engineering, industrial and systems engineering, and mechanical engineering.

**Guaranteed Admission** – Take advantage of the Guaranteed Admission Program (GAP) between MCC and NIU: <http://www.niu.edu/admissions/transfer/Guaranteed-Admission/>. Participation criteria and benefits include:

- Guaranteed University and engineering admission at the time of transfer under the following conditions:
  - High school graduate
  - Minimum of 24 transferable semester credit hours
  - Minimum 2.0 cumulative GPA on all transferable course work from MCC, and all colleges and universities attended prior to admission to NIU
  - General education and major-related coursework completed that is required for admission
  - Good standing at MCC
- Submit [Participation Form](#) found on NIU's website at least one year in advance of first semester at NIU.
- Eligible for admission to the NIU University Honors Program with a 3.2 transferable cumulative GPA
- Academic advising from both MCC academic advisors and NIU transfer support staff
- A clear path to your degree program
- Application fee waived

### **Transfer Options**

- **Associate in Engineering Science (AES) Degree** - Engineering baccalaureate programs are highly structured and require extensive, sequential math and science courses at freshman and sophomore levels; some general education courses are postponed to junior and senior years. The AES degree allows students to take courses in this pattern. (The AES degree does not include the complete IAI GECC.) Course recommendations on the following pages of this guide apply to MCC's AES degree and to specific engineering majors at NIU.
- **Illinois Articulation Initiative General Education Core Curriculum (IAI GECC)** - Completing the IAI GECC prior to transferring is not recommended. Students should focus on completing prerequisite math and science courses and some courses that fulfill NIU general education requirements. Course recommendations on this guide provide guidance to NIU's general education requirements that can be completed at MCC.

### **Transfer Application and Admission**

- Application deadline: **Spring**, December 1; **Fall**, August 1; **Summer**, May 15
- Submit application and supporting documents to the NIU Office of Admission. Refer to the NIU catalog for application information.
- **Admission to Major**
  - Applicants indicate a primary area of engineering interest on the Application for Transfer Admission.
  - Students will be placed into the major at the point of admission if university admission requirements are met. There are no requirements beyond university admission requirements for engineering majors within CEET.

## Additional Information

- **Grade Requirement** - With the exception of ENG151 and 152, NIU will accept the D grade for general education requirements. Most major related courses require a minimum C grade. Some majors have special grade requirements.
- **GPA Calculation** – NIU uses the sending institutions transcribed cumulative GPA for admission purposes.
- **Maximum hours from a community college** - Up to 66 academic semester hours from a community college.
- **Catalog Rule** - Students may choose the NIU catalog which was in effect when they became freshmen at their original school or any later NIU catalog, providing they were enrolled during the catalog year of their choice. The catalog year must not precede enrollment at NIU by more than three years. Students may elect to satisfy all graduation requirements from a single catalog or major and minor requirements from one and general education requirements from a second. Students should speak with their NIU academic advisor for information on policies related to catalogs/catalog year.

## Education Plan - Course recommendations for AES degree completion and for specific engineering majors at NIU

- Please refer to MCC's current academic catalog for IAI course options and detailed AES degree requirements.
- See following page for semester plan

<b>Associate in Engineering Science Degree Requirements</b>	
<b>General Core and Support Courses</b> (Refer to MCC's catalog for approved IAI courses.)	
<p><b>Communications</b> (6 credits)            _____ ENG151 Composition I, C or better            _____ ENG152 Composition II, C or better</p> <p><b>Humanities &amp; Fine Arts</b> (3-6 credits)            _____ IAI Humanities or Fine Arts</p> <p><b>Social &amp; Behavioral Sciences</b> (3-6 credits)            _____ IAI Social &amp; Behavioral Sciences (Industrial ECO251 or 252 and PSY151; all other majors PSY151)</p> <p><b>Non-Western Cultures or Minority Cultures within the United States</b>            Select 0-3 credits. One non-western/minority cultures course is required, which also can satisfy Hum/Fine Arts or Soc/Beh Sci requirement.            _____ ANT151, 170; ART155, 165; ENG 275, 276; GEG203, 204; HIS165; MUS153; PHI160, 261; SOC260</p>	<p><b>Mathematics</b> (17 credits)            _____ MAT175 Calculus w/Analytic Geo I (5)            _____ MAT245 Calculus w/Analytic Geo II (5)            _____ MAT255 Calculus w/Analytic Geo III (4)            _____ MAT260 Differential Equations (3)</p> <p><b>Science</b> (13 credits)            _____ CHM165 General Chemistry I (5)            _____ PHY291 Principles of Physics I (4)            _____ PHY292 Principles of Physics II (4)</p> <p><b>Computer Science</b> (4 credits)            _____ CSC121 Computer Science I            (CSC121 is not a direct equivalent to the NIU requirement. Students must communicate with NIU Comp Sci Dept to officially receive credit for CSCI240)</p>
<b>Total Credits Required for General Core and Support Courses credits</b>	<b>46 - 52 credits</b>
<b>Engineering Specialty Courses</b> (It is important to complete sequence courses at MCC.)	
<p><b>Electrical &amp; Computer Engineering emphasis</b>            _____ EGR251 Statics (3)            _____ EGR252 Dynamics (3)</p>	<p>_____ EGR260 Circuit Analysis (4)            _____ PHY293 Prin of Physics III (4)</p>
<b>14</b>	<b>14</b>
<p><b>Biomedical Engineering</b>            _____ CHM166 General Chemistry II (5)            _____ EGR260 Circuit Analysis (4)</p>	<p>_____ PHY293 Prin of Physics III (4)            _____ BIO157 Fundamentals of Biology (4)</p>
<b>17</b>	<b>17</b>
<p><b>Industrial and Systems Engineering</b>            _____ EGR151 Eng Graphics (4)            _____ EGR251 Statics (3)</p>	<p>_____ EGR252 Dynamics (3)            (take a minimum of 15 credits in Communications, Humanities/Fine Arts and Social/Behavioral Sci to satisfy the 60 credits required for the AES)</p>
<b>10</b>	<b>10</b>
<p><b>Mechanical Engineering</b>            _____ EGR151 Engineering Graphics (4)            _____ EGR251 Statics (3)</p>	<p>_____ EGR252 Dynamics (3)            _____ EGR260 Circuit Analysis (4)</p>
<b>14</b>	<b>14</b>
<b>Total Credits Required for AES Degree</b>	
<b>60-68</b>	

**Recommended Semester Course Sequencing (See Associate in Engineering Science degree on previous page)**

Many courses are only offered one time each year. Work closely with your academic advisor when developing your schedule.

Refer to MCC’s catalog for IAI Social Science & Humanities options. (Take into consideration Non-Western/Minority Cultures course options that satisfy AES requirements in Humanities/Fine Arts and Social/Behavioral Sciences).

**Summer 1**

MAT165 College Algebra & Trigonometry 5 credits

**Note:** MAT165 is not part of the AES degree, but it is a prereq for MAT175. Based on your placement exam, you may not need the course. However, if it is necessary, it is strongly recommended that you take it the summer prior to beginning your coursework at MCC in order to complete the highly sequential pre-engineering courses.

**Biomedical and Electrical Engineering**

Fall I	Spring I	Summer
ENG151 Composition I 3 CHM165 General Chemistry I 5 IAI Social & Behavioral Science (PSY151) 3 MAT175 Calculus w/Analytic Geometry 5  Semester Hours 16	ENG152 Composition II 3 *CHM166 General Chemistry II or 3-5 IAI Hum/FA or Soc Beh Sci MAT245 Calculus w/Analytic Geometry II 5 PHY291 Principles of Physics I 4  Semester Hours 15-17	IAI Humanities/Fine Arts 3
Fall II	Spring II	Summer
CSC121 Computer Science I 4 **EGR251 Statics or BIO157 Fund Biology 3-4 MAT255 Calculus w/Analytic Geometry III 4 PHY292 Principles of Physics II 4  Semester Hours 15-16	***EGR252 Statics or IAI Hum/FA, Soc Sci 3 MAT260 Differential Equations 3 PHY293 Principles of Physics III 4 Technical Elective (EGR260) or 3-4 IAI General Core  Semester Hours 13-14	Internship Bridge Program/Courses

- \* CHM166 - Biomedical Engineering
- \*\* EGR251 - Electrical; BIO157 - Biomedical
- \*\*\* EGR252 – Electrical

Note: EGR260 is not offered every year.

**Industrial, Mechanical, and Mechatronics Engineering**

Fall I	Spring I	Summer
ENG151 Composition I 3 CHM165 General Chemistry I 5 IAI Social & Behavioral Science (PSY151) 3 MAT175 Calculus w/Analytic Geometry 5  Semester Hours 16	ENG152 Composition II 3 EGR151 Engineering Graphics 4 MAT245 Calculus w/Analytic Geometry II 5 PHY291 Principles of Physics I 4  Semester Hours 16	IAI Humanities/Fine Arts 3
Fall II	Spring II	Summer
CSC121 Computer Science I 4 EGR251 Statics 4 MAT255 Calculus w/Analytic Geometry III 4 PHY292 Principles of Physics II 4  Semester Hours 16	EGR252 Statics 3 MAT260 Differential Equations 3 IAI Social & Behavioral Science 3 (ECO251 or 252) *Technical Elective (EGR260) or 3-4 IAI Humanities/Fine Arts  Semester Hours 12-13	Internship Bridge Program/Courses

\*EGR260 Electrical Circuits – Mechanical (not offered every year)