

**TRANSFER PACKET  
FOR**

# **Engineering Majors**

## **CONTENTS**

**This guide is for students who plan to transfer and major in engineering. It is divided into three sections:**

- Transfer Program Planning Guides for engineering majors. This transfer guide meets the requirements for the Associate in Engineering Science (AES) degree and the Illinois Articulation Initiative's recommendations for this major.
  
- Information about engineering programs at the following schools in Illinois:
  - Bradley University
  - Illinois Institute of Technology
  - Northern Illinois University
  - Southern Illinois University – Carbondale
  - Southern Illinois University – Edwardsville
  - University of Illinois at Chicago
  - University of Illinois at Urbana-Champaign
  
- A table of equivalencies that shows the transferability of Harper courses to several schools.

Requirements change frequently; students are encouraged to check current information with a Student Development Center or with the transfer school directly.

**Final responsibility for verifying all transfer information lies with the student.**

# TRANSFER PROGRAM PLANNING GUIDE FOR ENGINEERING MAJORS

## Transfer Notes

- A bachelor's degree in engineering is generally acceptable for beginning engineering jobs. Most engineering degrees are granted in branches such as electrical, mechanical, or civil engineering. However, engineers trained in one particular branch may work in another.
- Some colleges offer degrees in engineering technology which prepare students for practical design and production work rather than for jobs that require more theoretical scientific and mathematical knowledge. These technology degrees have course requirements that differ from the sample program shown below.

## Course Placement Information

Placement in English and math is dependent upon ACT scores, previous courses or assessment scores.

## Suggested Courses

- This recommended transfer program for engineering students meets the requirements for an Associate in Engineering Science (AES) degree.
- Completion of the AES degree does **not** fulfill the requirements of the Illinois General Education Core Curriculum. After transfer, AES students will need to complete the general education requirements of the institution to which they transfer.
- Requirements for schools vary. Students should check individual school requirements before completing the curriculum as outlined.

## ENGINEERING<sup>1</sup>

This sample transfer planning guide meets the requirements of the A.E.S. degree and follows the Illinois Articulation Initiative engineering baccalaureate major recommendations. Students should have a strong background in mathematics and the physical sciences. Transfer institution requirements may vary-students should check individual college/university requirements before completing the sample plan as outlined. Baccalaureate admission may be competitive; completion of these courses does not guarantee admission.

### Communications

6 credit hours required.

ENG 101 English Composition I	3
ENG 102 English Composition II	3

### Mathematics

18 credit hours required.

MTH 200 Calculus with Analytic Geometry I	5
MTH 201 Calculus with Analytic Geometry II	5
MTH 202 Calculus with Analytic Geometry III	5
MTH 212 Differential Equations	3

### Computer Science

4 credit hours required.

CSC 121 Computer Science I	4
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### Physical and Life Science

15 credit hours required.

CHM 121 General Chemistry I	5
PHY 201 General Physics I–Mechanics	5
PHY 202 General Physics II Heat, Electricity and Magnetism	5

### Humanities & Fine Arts

3 credit hours required. 3

Select at least one course from humanities and one from fine arts. Interdisciplinary courses may count in either category. Refer to the Associate in Engineering Science degree for the approved courses in this category. One course from humanities and fine arts or social and behavioral sciences must meet the world cultures and diversity requirement for the Associate in Engineering Science degree.

### Social & Behavioral Sciences

3 credit hours required. 3

Refer to the Associate in Engineering Science degree for the approved courses in this category. One course from humanities and fine arts or social and behavioral sciences must meet the world cultures and diversity requirement for the Associate in Engineering Science degree.

### Engineering Specialty

13 credit hours required. 13

Specialty courses must be approved in consultation with engineering chair.

Chemical–CHM 122,204,205

Civil–EGR 121, 210, 211, 212

Computer–CSC 122; EGR 260, 262, 270; MTH 220

Electrical–EGR 260, 262, 270; PHY 203

Industrial–EGR 121, 210, 211, 212

Mechanical–EGR 121, 210, 211, 212, 240, 260, 262

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<sup>1</sup> Completion of the Associate in Engineering Science degree does not fulfill the requirements of the Illinois General Education Core Curriculum. After transfer, AES students will need to complete the general education requirements of the institution to which they transfer.

# **BRADLEY UNIVERSITY**

Peoria, IL 61625

1-800-447-6460

<http://admissions.bradley.edu/>

Name and Phone Number of Engineering Contact:

**Ann Frank**  
**Admissions Representative**  
**309-677-3418**  
[aafrank@bradley.edu](mailto:aafrank@bradley.edu)

Does this school average, or take the higher grade with regards to repeated courses?

**Higher grade.**

Can students transfer as undecided majors, and then later be admitted to the Engineering major?

**Yes.**

If students fall below the required GPA at Harper, will the College still review their application for consideration? Or, are students automatically not eligible for admittance?

**Students will be reviewed based on their individual course work, but it really depends on their major whether or not they will be considered for admission.**

## **MAJORS**

- Civil Engineering (Environmental option)
- Construction
- Electrical Engineering (Computer option)
- Engineering Physics
- Industrial Engineering
- Manufacturing Engineering
- Manufacturing Engineering Technology (Design & Systems option)
- Mechanical Engineering (Biomedical or Energy Concentration)

## **ADMISSION**

The minimum grade point average for admission into Engineering is 2.5 (actual admission GPA may be higher for some majors). For Mechanical, Electrical, and Engineering Physics majors, demonstrated strength in math and science courses will be important. Applications of students with lower GPA's will be accepted and reviewed on an individual basis.

## **COURSES**

**General Education Recommendations (these courses are only recommended; they do not need to be completed before transfer):**

- ENG 101
- Engineering majors need not take ENG 102 at Harper; a 300-level composition course is required at Bradley.
- HST 141 or 142
- A Non-Western Civilization course
- A Fine Arts course
- A PHI or LIT course
- An ECO course, such as ECO 211 or ECO 212 (especially recommended for students interested in a business minor)
- Courses transfer on a course by course basis (Harper does not have a compact agreement with Bradley).

**Other recommendations (these courses are only recommended; they do not need to be completed before transfer):**

Civil and Mechanical Engineering: MTH 200, 201, 202, 212; CHM 121, 122; PHY 201, 202, 203; EGR 205

Construction Engineering: ECO 211 + 212; MTH 200, 201; GEO 101; PHY 121 or 201 + 202 + 203; ACC 101 + 102; ATE 102; ATE 103 + 104; ATE 105; EGR 205, 212

Electrical Engineering: MTH 200, 201, 202, 203, 212; CHM 121; PHY 201 + 202 + 203; EGR 270

Industrial Engineering: MTH 200, 201, 202, 212; CHM 121; PHY 201 + 202 + 203; EGR 205

Manufacturing Engineering: MTH 200, 201, 202, 212; PHY 201 + 202 + 203; CHM 121; EGR 205, 212

Manufacturing Technology: PHY 101, 102; CHM 110; EGR 205, 212

## **ACCREDITATION**

- Accreditation Board for Engineering Technology (ABET).
- Bradley is one of a few institutions which has accreditation in both Manufacturing Engineering and Manufacturing Engineering Technology.

## MISCELLANEOUS

- Bradley offers automatic \$3,000 scholarships for students with a transfer-in grade point average of 3.0 and a minimum of their last 24 hours of transferable work from a community college. The scholarship is renewable annually if the student maintains a 3.0 GPA.
- Bradley also offers an automatic \$5,000 scholarship for students with a transfer-in grade point average of 3.5 and a minimum of 45 semester hours (the last 24 hours must be from a community college). The award is renewable if the student maintains a 3.0 GPA. (This would replace the automatic \$3,000 scholarship.)
- Bradley offers an automatic Phi Theta Kappa \$5,000 scholarship for members of PTK. This award is renewable year with a 3.0 GPA. (This would replace the \$3,000 and \$5,000 transfer scholarships.)
- A paid work/study program is available which is called the Cooperative Education Program. Students may spend up to three full-time semesters in Cooperative Education in addition to four years of degree requirements.

A paid work/study program is available which is called the Cooperative Education Program. Students may spend up to three full-time semesters in Cooperative Education in addition to four years of degree requirements.

# ILLINOIS INSTITUTE OF TECHNOLOGY

3300 S. Federal St.  
Chicago, IL 60616  
312-567-3000

Name and Phone Number of Engineering Contact:

**Office of Admissions**  
**312-567-3025**  
[admission@iit.edu](mailto:admission@iit.edu)

Does this school average, or take the higher grade with regards to repeated courses?

**Higher grade.**

Can students transfer as undecided majors, and then later be admitted to the Engineering major?

**Yes, students can start as undecided engineering and then pick a specific engineering major.**

If students fall below the required GPA at Harper, will the College still review their application for consideration? Or, are students automatically not eligible for admittance?

**Yes, students will still be reviewed, however IIT is really looking for a 3.0 cumulative GPA for admission purposes.**

## MAJORS

- Aerospace Engineering
- Computer Engineering
- Biomedical Engineering
- Architectural Engineering (*may be completed on full-time basis only*)
- Environmental Engineering
- Chemical Engineering
- Mechanical Engineering
- Civil Engineering
- Metallurgical & Materials Engineering

## ADMISSION

Admission to the Illinois Institute of Technology is competitive. Transfer students must have completed at least 30 semester hours and have a minimum 3.0 GPA. D grades do not transfer to IIT.

## COURSES

- A list of equivalent Harper courses may be accessed at this site:  
[http://www.iit.edu/ugaa/transfer\\_credit/harper\\_college/index.shtml](http://www.iit.edu/ugaa/transfer_credit/harper_college/index.shtml)
- Courses transfer on a course by course basis (Harper does not have a compact agreement with IIT).

- Transfer applicants with less than 30 transferable credit hours must submit high school transcripts and ACT scores.

## BIOMEDICAL ENGINEERING

I. GENERAL EDUCATION PROGRAM - Please consult the General Education section of the current IIT Bulletin for complete requirements.

- A. Basic Writing Proficiency - Students must show basic writing proficiency by receiving a satisfactory score on the Writing Proficiency Examination or by passing an English Composition course.
- B. Humanities - Choose one course from the following: HST 105, 111, 112, 141, 142, 151, 152, 212, 245, 261; HUM 101, 102, 104, 105, 120, 125; LIT 105, 110, 112, 115, 206, 207, 210, 215, 216, 217, 220, 221, 222, 223, 224, 231, 232, 241; or PHI 105, 115, 120, 150, 160, 170, 180, 190, 205, 210, 220, 231, 232.
- C. Social Sciences - Choose one course from the following: ANT 101, 202, 203, 205, 206, 207, 208, 209, 210; ECO 200, 210, 211, 212; GEG 100, 101, 103, 104, 210; PSC 101, 220, 250, 260, 270, 280; PSY 101, 210, 216, 217, 218, 220, 225, 228, 230, 235, 245; or SOC 101, 120, 205, 210, 215, 230, 235.
- D. Choose one course from section B or section C or from the following: ART 114, 130, 131, 132; HST 121, 153, 210, 214, 219, 231, 232, 241, 242, 243; HUM 103, 110; LIT 208, 219; LNG 105, 205; or MUS 103, 104, 120; PHI 101, 102.

II. EQUIVALENCIES - Following is a list of courses that will transfer into the Biomedical Engineering program at IIT and their direct equivalents at Harper College:

<u>HARPER COURSE</u>	<u>TITLE</u>	<u>IIT EQUIVALENT</u>
MTH 200	Calculus with Analytic Geometry I	MATH 151
MTH 201	Calculus with Analytic Geometry II	MATH 152
MTH 202	Calculus with Analytic Geometry III	MATH 251
MTH 212	Differential Equations	MATH 252
PHY 201	General Physics I	PHYS 123
PHY 202 <u>and</u> 203	General Physics II and III	PHYS 221 <u>and</u> 223
CIS 168 <u>or</u>	JAVA Programming I	CS 115 <u>and</u> 116
CSC 214	Introduction to JAVA Programming	CS 115 <u>and</u> 116
EGR 210	Analytical Mechanics (Statics)	MMAE 200 (see note 2)
EGR 260	Introduction to Circuit Analysis	ECE 211
EGR 260, 262 <u>and</u> 270	Introduction to Circuit Analysis, Electrical Circuits Laboratory <u>and</u> Introduction to Digital Systems	ECE 211 <u>and</u> 218 (see note 2)
CHM 121	General Chemistry I	CHEM 124
CHM 122	General Chemistry II	CHEM 125
CHM 204	Organic Chemistry I	CHEM 237 (see note 2)



CHM 205

Organic Chemistry II

CHEM 239 (see note 2)

BIO 160

Human Anatomy

BIOL 115 and 117

Note 1. Required for the Cell and Tissue Engineering and Medical Imaging tracks.

Note 2. Required for the Medical Imaging track.

## CHEMICAL ENGINEERING

I. GENERAL EDUCATION PROGRAM - Please consult the General Education section of the current IIT Bulletin for complete requirements.

- A. Basic Writing Proficiency - Students must show basic writing proficiency by receiving a satisfactory score on the Writing Proficiency Examination or by passing an English Composition course.
- B. Humanities - Choose one course from the following: HST 105, 111, 112, 141, 142, 151, 152, 212, 245, 261; HUM 101, 102, 104, 105, 120, 125; LIT 105, 110, 112, 115, 206, 207, 210, 215, 216, 217, 220, 221, 222, 223, 224, 231, 232, 241; or PHI 105, 115, 120, 150, 160, 170, 180, 190, 205, 210, 220, 231, 232.
- C. Social Sciences - Choose one course from the following: ANT 101, 202, 203, 205, 206, 207, 208, 209, 210; ECO 200, 210, 211, 212; GEG 100, 101, 103, 104, 210; PSC 101, 220, 250, 260, 270, 280; PSY 101, 210, 216, 217, 218, 220, 225, 228, 230, 235, 245; or SOC 101, 120, 205, 210, 215, 230, 235.
- D. Choose one course from section B or section C or from the following: ART 114, 130, 131, 132; HST 121, 153, 210, 214, 219, 231, 232, 241, 242, 243; HUM 103, 110; LIT 208, 219; LNG 105, 205; or MUS 103, 104, 120; PHI 101, 102.

II. EQUIVALENCIES - Following is a list of courses that will transfer into the Chemical Engineering program at IIT and their direct equivalents at Harper College:

<u>HARPER COURSE</u>	<u>TITLE</u>	<u>IIT EQUIVALENT</u>
MTH 200	Calculus with Analytic Geometry I	MATH 151
MTH 201	Calculus with Analytic Geometry II	MATH 152
MTH 202	Calculus with Analytic Geometry III	MATH 251
MTH 212	Differential Equations	MATH 252
PHY 201	General Physics I	PHYS 123
PHY 202	General Physics II	PHYS 221
CSC 121 <u>or</u>	Computer Science I	CS 105
EGR 260	Introduction to Circuit Analysis	ECE 215
CHM 122	General Chemistry II	CHEM 125
CHM 204	Organic Chemistry I	CHEM 237
CHM 205	Organic Chemistry II	CHEM 239
CHM 210	Quantitative Analysis	CHEM 247

## ARCHITECTURAL ENGINEERING OR CIVIL ENGINEERING

I. GENERAL EDUCATION PROGRAM - Please consult the General Education section of the current IIT Bulletin for complete requirements.

- A. Basic Writing Proficiency - Students must show basic writing proficiency by receiving a satisfactory score on the Writing Proficiency Examination or by passing an English Composition course.
- B. Humanities - Choose one course from the following: HST 105, 111, 112, 141, 142, 151, 152, 212, 245, 261; HUM 101, 102, 104, 105, 120, 125; LIT 105, 110, 112, 115, 206, 207, 210, 215, 216, 217, 220, 221, 222, 223, 224, 231, 232, 241; or PHI 105, 115, 120, 150, 160, 170, 180, 190, 205, 210, 220, 231, 232.
- C. Social Sciences - Choose one course from the following: ANT 101, 202, 203, 205, 206, 207, 208, 209, 210; ECO 200, 210, 211, 212; GEG 100, 101, 103, 104, 210; PSC 101, 220, 250, 260, 270, 280; PSY 101, 210, 216, 217, 218, 220, 225, 228, 230, 235, 245; or SOC 101, 120, 205, 210, 215, 230, 235.
- D. Choose one course from section B or section C or from the following: ART 114, 130, 131, 132; HST 121, 153, 210, 214, 219, 231, 232, 241, 242, 243; HUM 103, 110; LIT 208, 219; LNG 105, 205; or MUS 103, 104, 120; PHI 101, 102.

III. EQUIVALENCIES - Following is a list of courses that will transfer into the Architectural or Civil Engineering programs at IIT and their direct equivalents at Harper College

<u>HARPER COURSE</u>	<u>TITLE</u>	<u>IIT EQUIVALENT</u>
MTH 200	Calculus with Analytic Geometry I	MATH 151
MTH 201	Calculus with Analytic Geometry II	MATH 152
MTH 202	Calculus with Analytic Geometry III	MATH 251
MTH 212	Differential Equations	MATH 252
PHY 201	General Physics I	PHYS 123
PHYS 202	General Physics II	PHYS 221
CHM 121	General Chemistry I	CHEM 124
CSC 121	Computer Science I	CS 104 <u>or</u> 105
EGR 120	Engineering Graphics I	CAE 100 <u>and</u> 101
EGR 210	Analytical Mechanics (Statics)	MMAE 201
EGR 211	Analytical Mechanics (Dynamics)	MMAE 305
EGR 212	Mechanics of Solids	MMAE 202

# COMPUTER ENGINEERING OR ELECTRICAL ENGINEERING

I. GENERAL EDUCATION PROGRAM - Please consult the General Education section of the current IIT Bulletin for complete requirements.

- A. Basic Writing Proficiency - Students must show basic writing proficiency by receiving a satisfactory score on the Writing Proficiency Examination or by passing an English Composition course.
- B. Humanities - Choose one course from the following: HST 105, 111, 112, 141, 142, 151, 152, 212, 245, 261; HUM 101, 102, 104, 105, 120, 125; LIT 105, 110, 112, 115, 206, 207, 210, 215, 216, 217, 220, 221, 222, 223, 224, 231, 232, 241; or PHI 105, 115, 120, 150, 160, 170, 180, 190, 205, 210, 220, 231, 232.
- C. Social Sciences - Choose one course from the following: ANT 101, 202, 203, 205, 206, 207, 208, 209, 210; ECO 200, 210, 211, 212; GEG 100, 101, 103, 104, 210; PSC 101, 220, 250, 260, 270, 280; PSY 101, 210, 216, 217, 218, 220, 225, 228, 230, 235, 245; or SOC 101, 120, 205, 210, 215, 230, 235.
- D. Choose one course from section B or section C or from the following: ART 114, 130, 131, 132; HST 121, 153, 210, 214, 219, 231, 232, 241, 242, 243; HUM 103, 110; LIT 208, 219; LNG 105, 205; or MUS 103, 104, 120; PHI 101, 102.

II. EQUIVALENCIES -Following is a list of courses that will transfer into the Computer or Electrical Engineering programs at IIT and their direct equivalents at Harper College:

<u>HARPER COURSE</u>	<u>TITLE</u>	<u>IIT EQUIVALENT</u>
MTH 200	Calculus with Analytic Geometry I	MATH 151
MTH 201	Calculus with Analytic Geometry II	MATH 152
MTH 202	Calculus with Analytic Geometry III	MATH 251
MTH 212	Differential Equations	MATH 252
CHM 121	General Chemistry I	CHEM 122
CHM 122 <u>or</u>	General Chemistry II	Science Elective (CHEM 126)
BIO 110	Principles of Biology	Science Elective (BIOL 107)
PHY 201	General Physics I	PHYS 123
PHY 202 <u>and</u> 203	General Physics II and III	PHYS 221 <u>and</u> 224
EGR 210	Analytical Mechanics (Statics)	MMAE 200 (see note 1)
EGR 260 <u>and</u> 262	Introduction to Circuit Analysis <u>and</u> Electrical Circuits Laboratory	ECE 211
EGR 270	Introduction to Digital Systems	ECE 218
CIS 168 <u>or</u>	JAVA Programming I	CS 115 <u>and</u> 116
CSC 214	Introduction to JAVA Programming	CS 115 <u>and</u> 116
CSC 216 (CPE only)	Data Structures and Algorithm Analysis	CS 331

Note 1. MMAE 200 will apply as the engineering science elective in both degree programs.

## **AEROSPACE ENGINEERING, MECHANICAL ENGINEERING OR MATERIALS SCIENCE AND ENGINEERING**

I. GENERAL EDUCATION PROGRAM - Please consult the General Education section of the current IIT Bulletin for complete requirements.

- A. Basic Writing Proficiency - Students must show basic writing proficiency by receiving a satisfactory score on the Writing Proficiency Examination or by passing an English Composition course.
- B. Humanities - Choose one course from the following: HST 105, 111, 112, 141, 142, 151, 152, 212, 245, 261; HUM 101, 102, 104, 105, 120, 125; LIT 105, 110, 112, 115, 206, 207, 210, 215, 216, 217, 220, 221, 222, 223, 224, 231, 232, 241; or PHI 105, 115, 120, 150, 160, 170, 180, 190, 205, 210, 220, 231, 232.
- C. Social Sciences - Choose one course from the following: ANT 101, 202, 203, 205, 206, 207, 208, 209, 210; ECO 200, 210, 211, 212; GEG 100, 101, 103, 104, 210; PSC 101, 220, 250, 260, 270, 280; PSY 101, 210, 216, 217, 218, 220, 225, 228, 230, 235, 245; or SOC 101, 120, 205, 210, 215, 230, 235.
- D. Choose one course from section B or section C or from the following: ART 114, 130, 131, 132; HST 121, 153, 210, 214, 219, 231, 232, 241, 242, 243; HUM 103, 110; LIT 208, 219; LNG 105, 205; or MUS 103, 104, 120; PHI 101, 102.

II. EQUIVALENCIES - Following is a list of courses that will transfer into the Aerospace Engineering, Mechanical Engineering, or Materials Science & Engineering programs at IIT and their direct equivalents at Harper College:

<b><u>HARPER COURSE</u></b>	<b><u>TITLE</u></b>	<b><u>IIT EQUIVALENT</u></b>
MTH 200	Calculus with Analytic Geometry I	MATH 151
MTH 201	Calculus with Analytic Geometry II	MATH 152
MTH 202	Calculus with Analytic Geometry III	MATH 251
MTH 212	Differential Equations	MATH 252
CHM 121	General Chemistry I	CHEM 124
PHY 201	General Physics I	PHYS 123
PHY 202	General Physics II	PHYS 221
CSC 121	Computer Science I	CS 104 or 105
EGR 210	Analytical Mechanics (Statics)	MMAE 201
EGR 211	Analytical Mechanics (Dynamics)	MMAE 305 (see note 1)
EGR 212	Mechanics of Solids	MMAE 202

Note 1. Required only for Mechanical Engineering.

## **ACCREDITATION**

Accreditation Board for Engineering and Technology (ABET).

## **MISCELLANEOUS**

- A work/study program is available.
- There are Air Force, Army, and Naval ROTC programs. Engineering students compete well for admission to ROTC.
- Transfer scholarships, based on GPA in transferable and applicable courses, are available. Scholarships range from up to \$10,000 per year with an additional \$2,000 per year for Phi Theta Kappa members.
- IIT offers a "Master's Plan" whereby transfer students can earn both a B.S. and a M.S. degree in three years at IIT (see specific department).
- IIT offers a Bachelor of Manufacturing Technology for students with an A.A.S. degree in a manufacturing-related field. This is a part-time, evening program.
- IIT accepts a maximum of 68 semester hours of credit from accredited community colleges.

# NORTHERN ILLINOIS UNIVERSITY

DeKalb, IL 60115

1-800-892-3050

815-753-2256

Name and Phone Number of Engineering Contact:

**Dr. Omar Ghrayeb**

**Associate Dean, Outreach and Undergraduate Programs**

**815-753-9970**

[oghrayeb@niu.edu](mailto:oghrayeb@niu.edu)

Does this school average, or take the higher grade with regards to repeated courses?

**NIU takes the last grade in repeat situations, if it is a legal repeat.**

Can students transfer as undecided majors, and then later be admitted to the Engineering major?

**Engineering is not a "limited admissions" major, therefore, students can transfer to that major at any time.**

If students fall below the required GPA at Harper, will the College still review their application for consideration? Or, are students automatically not eligible for admittance?

**If students are not admissible to NIU, they will be denied.**

## MAJORS

- Electrical Engineering
- Industrial and Systems Engineering
- Mechanical Engineering

## ADMISSION

Students are encouraged to complete as many of the required engineering courses listed below with a 2.0 GPA at the community college before transferring to NIU:

<b>Electrical Engineering</b>	<b>Industrial &amp; Systems Engineering</b>	<b>Mechanical Engineering</b>
ENG 101, 102	ENG 101, 102	ENG 101, 102
CHM 121	CHM 121	CHM 121
CSC 121 & 122	CSC 121 & 122	CSC 121 & 122
EGR 100, 210, 211, 260 & 262, 270	EGR 100, 120, 210, 211, 260	EGR 100, 120, 210, 211, 212, 240, 260 & 262
MTH 200, 201, 202, 212	MTH 200, 201, 202, 212	MTH 200, 201, 202, 212
PHY 201, 202, 203	PHY 201, 202	PHY 201, 202
SPE 101	SPE 101	SPE 101
	ECO 211 or 212	
	PSY 101	

Early application is strongly suggested. Additional information for Harper transfer students can be found at: <http://www.niu.edu/CEET/CommunityCollegeAgreements/index.shtml>

Students should see a NIU Engineering advisor prior to registering for classes to meet the requirements below.

## **COURSES**

In addition to the information in this packet, students interested in majoring in Engineering at NIU should consult the NIU Engineering Transfer Guide available on Harper's website: [www.harpercollege.edu](http://www.harpercollege.edu) or in any academic advising center on campus.

Students may take EGR 100 at Harper. Otherwise NIU's UEET 101 must be taken during the student's first fall or spring term at Northern.

All engineering majors must meet the specific engineering general education requirements for the Accreditation Board for Engineering and Technology (ABET).

### **Guidelines for Students Transferring With an AA or AS:**

- Transferring under the compact agreement, you will have fulfilled the university general education requirements. Although transfer students with A.A or A.S degree may already have completed the university's general education requirements as discussed in "Admission" in the Northern Illinois University Catalog, their course work must include a minimum of 18 semester hours in humanities, arts, social sciences, and interdisciplinary areas (*Please see the NIU Engineering Transfer Guide mentioned above*). The rationale behind this statement is that although ABET sequencing is no longer required, A.S or A.A students need to demonstrate 9 hours in humanities and arts, 6 hours in social sciences, and 3 hours in interdisciplinary studies.
- Refer to the transfer guide for Harper courses that transfer under the humanities and arts and the social sciences.

### **Guidelines for Students Transferring Without an AA or AS:**

- You will be required to meet all NIU university general education requirements in addition to ensuring you have 18 hours in the humanities and arts and the social sciences. By combining the university general education information provided this transfer guide with the information that follows you will be able to minimize the course work necessary to meet all requirements. Because of the number of hours involved, some of this course work may need to be completed after transferring to NIU.
- You also must have a minimum of 6 hour sequences in the social sciences and a 3 hour course in interdisciplinary studies to bring you to the 18 hour total.

## **ACCREDITATION**

Accreditation Board for Engineering and Technology (ABET).

## **MISCELLANEOUS**

- Harper has a compact agreement with Northern Illinois University for students earning an A.A. or A.S. degree.
- NIU offers a Cooperative Education/Internship Program. Assignments involve at least 2 semesters (one may be a summer term) between the sophomore and senior years or a one-semester assignment as a senior intern.

# **SOUTHERN ILLINOIS UNIVERSITY-CARBONDALE**

Carbondale, IL 62901

618-536-4405

Name and Phone Number of Engineering Contact:

**College of Engineering**  
**618-453-7789**

**Chris Pearson**  
**Coordinator of Undergraduate Recruitment, College of Engineering**  
**618-453-7712**  
[cpearson@siu.edu](mailto:cpearson@siu.edu)

**Jenise Wilson**  
**Chief Academic Advisor**  
**618-453-2261**  
[jwilson@siu.edu](mailto:jwilson@siu.edu)

Does this school average, or take the higher grade with regards to repeated courses?

**SIUC currently averages repeated courses.**

Can students transfer as undecided majors, and then later be admitted to the Engineering major?

**Yes, students can either transfer as pre-major or engineering undecided. SIUC prefers that students major in engineering undecided. If students select pre-major, they might end up taking some courses that they wouldn't have had to take had they majored in engineering undecided.**

If students fall below the required GPA at Harper, will the College still review their application for consideration? Or, are students automatically not eligible for admittance?

**No, students must have the 2.0 GPA.**

## **MAJORS**

- Civil Engineering (Environmental Specialization available)
- Computer Engineering
- Electrical Engineering (Computer Engineering Specialization available)
- Engineering Technology (Electrical Specialization available)
- Industrial Technology (Manufacturing Technology Specialization available)
- Mechanical Engineering
- Mining Engineering (Geological Specialization available)



## ADMISSION

### AA or AS degree completed

Students that have completed the AA or AS degree with a GPA of 2.0/4.0 will be automatically admitted to the engineering program.

### 26 hours or more completed

Students who have completed 26 semester hours and have an overall GPA of 2.0 (computing all earned grades including repeated courses) may be admitted directly into an engineering program.

### Less than 26 hours completed

Students transferring with less than 26 semester hours must also have a 2.0 GPA on all college coursework, and must also meet the freshmen admission requirements (in which case high school records and ACT scores should be sent when applying).

## COURSES

Transfer students entering an Engineering program (not Engineering Technology or Industrial Technology) with a transfer Associate Degree are not required to complete the SIUC University General Education requirements. However, each is required to complete the following minimum general requirements for engineering majors. Please note that students are advised to complete the calculus, chemistry and physics course sequences before transferring. Often times, students miss essential information when changing institutions if a sequence is interrupted.

- 15 semester hours of approved social sciences and humanities required by ABET accreditation.
- 6 semester hours of oral and written communications, which can include English composition and speech.
- Civil and mechanical engineering majors require 8 semester hours of university physics and 7 semester hours of chemistry. Electrical and computer engineering majors require 8 semester hours of physics and an additional 4 semester hours of modern physics or other approved science course. For Mining Engineering majors, 6 semester hours of natural sciences must be taken in geology (Harper's GEO 101 and SIUC's GEOL 390) in addition to the 8 hours of physics and chemistry (4 hours of physics and 4 hours of chemistry—one semester each).
- 17 semester hours of mathematics (beginning with Calculus I) are required.

If a student has less than a "C" grade in mathematics, science or engineering courses, he/she will need to repeat the course at SIUC.

### Helpful Information for Engineering Transfer Students:

Students who have not completed an AA or AS degree from a baccalaureate-oriented program must complete the University's Core Curriculum requirements.

Calculus I (**Harper's MTH 200**), II (**Harper's MTH 201**) and Mechanics (statics and dynamics—**Harper's EGR 210 and EGR 211**) are prerequisites for most junior-level mechanical, mining and civil engineering courses. (Statics and dynamics are not prerequisites for electrical or computer engineering courses).

Mechanical Engineering students are strongly encouraged to complete statics (**Harper's EGR 210**), dynamics (**Harper's EGR 211**), calculus III (**Harper's MTH 202**), and differential equations (**Harper's MTH 212**) prior to transfer.

A minimum of six semester hours of Statics (**Harper's EGR 210**) and Dynamics (**Harper's EGR 211**) are required for all engineering majors except Electrical and Computer Engineering.

If a transfer student lacks Calculus III (Math 251=**Harper's MTH 202**) and Differential Equations (Math 305=**Harper's MTH 212**) this should not create a problem since most of the junior-level courses do not require Math 251 or 305 as a prerequisite.

Transfer students may substitute an approved drafting course (CAD based) for (ENGR 102=**Harper's EGR 120 or EGR 121**) (Computer-Aided Engineering Drawing) or (ECE 101=**No Harper Equivalent**) (Intro to Electrical and Computer Engineering).

In some instances, a student may have a strong background in areas covered by the 300-level courses in an engineering curriculum, but the method of obtaining that background may not allow transfer credits, e.g. non-ABET accredited courses, military or vocational training. In such cases, a student may apply for and take proficiency examinations. A minimum grade of a "C" on the examination gives the student credit for the course.

### **Helpful Information for Engineering Technology (with Electrical Engineering Technology Specialization) Transfer Students:**

Prior to transfer, it is recommended that any student wishing to major in Engineering Technology complete mathematics through Applied Calculus to include **Harper's MTH 103, MTH 104, MTH 134** and Statistics (**Harper's MTH 165 or MTH 265**), the college physics sequence (**Harper's PHY 121 and PHY 122**), a computer science course in "C ++" language (**Harper's CIS 166 or CSC 211**) and technical report writing (**Harper's ENG 103**). Also, **Harper's ELT 103** is helpful to complete as SIU's equivalent course (ET245a) is only offered in the spring.

If students have less than a "C" grade in mathematics, science or engineering technology courses, they should be encouraged to repeat these courses either at SIUC or at the community college.

Transfer students in engineering technology with an AA or AS degree from an approved baccalaureate-oriented program are not required to complete the University's Core Curriculum requirements; however each is required to complete the following minimum general requirements for the engineering technology major:

- A. Fourteen semester hours of approved social sciences and humanities are required by ABET accreditation. Approved departmental courses in social sciences and humanities may be taken rather than University Core Curriculum courses.
- B. Nine semester hours of oral and written communications are required and can include English composition and speech.

Students who have not completed an AA or AS degree from a baccalaureate-oriented program must complete the University's Core Curriculum requirements.

In some instances, a student may have a strong background in areas covered by the 300-level courses in an engineering technology curriculum, but the method of obtaining that background may not allow transfer credit; e.g., military or vocational training. In such cases, a student may apply for and take proficiency examinations. A minimum grade of "C" on the examination gives the student credit for the course.

To avoid possible loss of transfer credit, students in an AA or AS program who are planning to enroll in Electrical Engineering Technology should avoid non-baccalaureate-oriented technical courses. Students planning to transfer to electrical engineering are strongly encouraged to complete an electrical circuits class with laboratory (**Harper's ELT 103**) before transferring to enable them to enroll in junior level electrical engineering technology courses.

### **Helpful Information for Industrial Technology Transfer Students:**

Transfer students in Industrial Technology with an Associate Degree from an approved baccalaureate-oriented program are not required to complete the University's Core Curriculum requirements. However, the Industrial Technology program accreditation requires as a minimum, nine semester hours of English composition, speech, social sciences and humanities.

Students with an associate in applied science degree from a regionally accredited institution may qualify for the Capstone Option. A special application is required for Capstone and must be submitted no later than the completion of the student's first semester in Industrial Technology at SIUC.

### **ACCREDITATION**

Accreditation Board for Engineering and Technology (ABET). The Electrical Engineering degree has received the highest level of accreditation ABET awards.

### **MISCELLANEOUS**

Harper has a compact agreement with Southern Illinois University.

# **SOUTHERN ILLINOIS UNIVERSITY-EDWARDSVILLE**

Edwardsville, IL 62026

1-800-447-SIUE

Name and Phone Number of Engineering Contact:

**School of Engineering**

**618-650-2541**

**618-650-2534 (Tonja-secretary)**

**Loen Graceson-Martin**

**Director**

**618-650-5300**

[lgraces@siue.edu](mailto:lgraces@siue.edu)

Does this school average, or take the higher grade with regards to repeated courses?

**SIUE only accepts credits from other schools; they do not receive letter grades. SIUE looks at the cumulative GPA and accepts credit hours.**

Can students transfer as undecided majors, and then later be admitted to the Engineering major?

**Yes.**

If students fall below the required GPA at Harper, will the College still review their application for consideration? Or, are students automatically not eligible for admittance?

**A student must have a 2.0 GPA and 30 credit hours to be admitted.**

## **MAJORS**

- Civil Engineering
- Construction Management
- Computer Engineering
- Computer Science
- Electrical Engineering
- Manufacturing Engineering
- Industrial Engineering
- Mechanical Engineering

## **ADMISSION**

In order to be admitted to the School of Engineering, students must complete the following:

- College algebra with a C or better
- Minimum GPA required is 2.0/4.0
- 30 semester hours

### **Helpful courses to include as part of an AA, AS, or an AES for all Engineering students:**

- General chemistry (**Harper's CHM 121**)
- Calculus based physics I and II (**Harper's PHY 201 and PHY 202**)
- Calculus I, II, III (**Harper's MTH 200, MTH 201 and MTH 202**) and differential equations (**Harper's MTH 212**)
- Mechanics I and Mechanics II, or Statics/Dynamics (**Harper's EGR 120, 210, 211, 212**)
- **For Electrical and Computer Engineering take EGR 260 and EGR 270 (instead of EGR 120, 210, 211 and 212)**
- Macroeconomics (**Harper's ECO 212**)

### **Helpful courses to include as part of an AA, AS for Computer Science:**

- Calculus I and II (**Harper's MTH 200 and MTH 201**) and a math elective, such as Calculus III (**Harper's MTH 202**) or linear algebra (**Harper's MTH 203**)
- Discreet math (**Harper's MTH 220**) is helpful because students must take the course at SIUE
- Any combination of three lab science courses from general chemistry I and II (**Harper's CHM 121 and CHM 122**), calculus based physics I and II (**Harper's PHY 201 + PHY 202**) or biology with a lab (**Harper's BIO 110**) (courses have to be a pair of physics, or a pair of chemistry out of the combination)
- A course in C++ language (any C language based course) (**Harper's CIS 166 and CS 176**)

### **ACCREDITATION**

The Civil, Computer Science, Computer Engineering, Electrical, Industrial, Manufacturing and Mechanical Engineering B.S. programs are all ABET accredited. The Construction Management program is ACCE accredited.

# UNIVERSITY OF ILLINOIS AT CHICAGO

P.O. Box 5220 MC 018

Chicago, IL 60680

312-996-4350

Name and Phone Number of Engineering Contact:

**College of Engineering  
312-996-3463**

Does this school average, or take the higher grade with regards to repeated courses?

**UIC calculates a cumulative grade point average based on all grades attempted and earned for a repeated transferable course.**

Can students transfer as undecided majors, and then later be admitted to the Engineering major?

**It's possible—students can transfer into Liberal Arts and Sciences as pre-engineering and then transfer into Engineering later on. But, students would have to first meet the transfer requirements to enter LAS and then while in LAS meet the requirements for Engineering; this is not recommended.**

If students fall below the required GPA at Harper, will the College still review their application for consideration? Or, are students automatically not eligible for admittance?

**Students would be reviewed on a case-by-case basis if they do not have a 2.5 GPA.**

## MAJORS

- Bioengineering
- Chemical Engineering
- Civil & Materials Engineering
- Computer Engineering
- Computer Science
- Electrical Engineering
- Engineering Management
- Engineering Physics
- Industrial Engineering
- Mechanical Engineering

## ADMISSION

The admission requirement to transfer into the College of Engineering is a minimum GPA of 2.5 (A=4.0) for Illinois residents and 2.75 for nonresidents. Both cumulative GPA, and the GPA for science, math, and engineering courses, must meet this requirement.

## COURSES

### All Engineering Majors Except Computer Science:

- ENG 101 and 102
- MTH 200, 201, 202, 212
- PHY 201 and 202
- CHM 121

### Computer Science majors only

- ENG 101 and 102
- MTH 200, 201, 202
- 10 hours of lab science – choose from BIO 110, 120, 140, 115, 116; GEO 101 or 102; CHM 121, 122; PHY 201, 202

Students with the most courses completed at the time of application as well as the highest GPA will be given priority for admission.

Student interested in taking CSC 121 and 122 should be aware that depending on their major one of the courses may not be used. Please see the grid below for more information:

<b>Engineering Major at UIC</b>	<b>CSC 121 Used in Degree</b>	<b>CSC 122 Used in Degree</b>
Bioengineering	No	Yes
Chemical Engineering	Yes	No
Civil Engineering	Yes	No
Computer Engineering	No	Yes
Computer Science	No	Yes
Electrical Engineering	No	Yes
Engineering Physics	No	Yes
Engineering Management	Yes	No
Industrial Engineering	Yes	No
Mechanical Engineering	Yes	No

Please note that both courses transfer to UIC and will be used in determining your transfer GPA but depending on your major, it may or may not be used towards your degree.

Specific majors in the College of Engineering have varied requirements in chemistry, physics, and engineering courses. UIC recommends utilizing Transferology ([www.transferology.com](http://www.transferology.com)) to determine how your courses will transfer.

Although D grades transfer to UIC they will not be applied towards an Engineering degree.

### **ACCREDITATION**

Bioengineering, Chemical, Civil, Computer Engineering, Electrical, Industrial, and Mechanical Engineering are accredited by the Accreditation Board for Engineering and Technology (ABET).

### **MISCELLANEOUS**

University of Illinois at Chicago offers the Cooperative Engineering Education Program, which is a coordinated alternating work-and-study program.



# UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

Urbana, IL 61801  
217-333-0302

Name and Phone Number of Engineering Contact:

**College of Engineering  
Undergraduate Programs  
217-333-2280**

Does this school average, or take the higher grade with regards to repeated courses?

**UIUC averages the two grades.**

Can students transfer as undecided majors, and then later be admitted to the Engineering major?

**No, students must select a major when transferring.**

If students fall below the required GPA at Harper, will the College still review their application for consideration? Or, are students automatically not eligible for admittance?

**Each college has a target number of spaces available for each term, and the admission GPA is based upon the quality of applicants. The best candidates are selected for the spaces available. It's better for students to have the minimum GPA.**

**Admission criteria are: 1) completion before transfer of appropriate course work for your major; 2) GPA; 3) Technical GPA (GPA of math, physics and chemistry courses and 4) Personal and Professional Essay information on the application. Eligibility of transfer applicants with fewer than 30 semester hours is based upon high school percentile rank, ACT or SAT test score, GPA, and content of transferable courses attempted.**

## **MAJORS**

- Aerospace Engineering
- Agricultural Engineering
- Chemical Engineering (*see the College of Liberal Arts and Sciences*)
- Civil and Environmental Engineering
- Computer Engineering
- Computer Science
- Electrical Engineering
- Engineering Mechanics
- Engineering Physics
- General Engineering
- Industrial Engineering
- Materials Science and Engineering
- Mechanical Engineering
- Nuclear, Plasma and Radiological Engineering

**College options:** Polymer Science and Engineering, and Manufacturing Engineering.

**Agricultural Specialization:** Power and Machinery, Soil and Water, Structures and Environment, Electric Power and Processing, and Food & Bioprocess Engineering.

## ADMISSION

All programs require a 3.0 technical and 3.0 cumulative GPA.

### AEROSPACE ENGINEERING

Admission is CLOSED for students who have completed less than 60 hours prior to transfer

For students who have completed 60 hours or more

- 3.0 cumulative and technical (chemistry, math, physics) GPA required
- CHM 121
- MTH 200, 201, 202, 212
- MTH 203
- PHY 201, 202, 203
- EGR 210 and 211
- Foreign language recommendation

### AGRICULTURAL AND BIOLOGICAL ENGINEERING

For students who have completed less than 60 hours prior to transfer

- CHM 121 and 122
- MTH 200 and 201
- PHY 201
- ENG 101 and 102
- Foreign language recommendation

For students who have completed 60 hours or more, in addition to the above

- CSC 121
- MTH 202 and 212
- MTH 203
- PHY 202 and 203
- EGR 210 and 211

### CIVIL ENGINEERING

For students who have completed less than 60 hours prior to transfer

- CHM 121 and 122
- MTH 200 and 201
- PHY 201
- ENG 101 and 102
- Foreign language recommendation

For students who have completed 60 hours or more, in addition to the above

- CSC 121
- MTH 202 and 212
- MTH 203
- PHY 202 and 203
- EGR 210, 211, 212

## COMPUTER ENGINEERING

For students who have completed less than 60 hours prior to transfer

- CHM 121
- MTH 200 and 201
- PHY 201
- ENG 101 and 102
- Foreign language recommendation

For students who have completed 60 hours or more, in addition to the above

- CSC 216
- EGR 110 or EGR 260 and 262 (both must be taken)
- MTH 220
- MTH 202 and 212
- PHY 202 and 203

## COMPUTER SCIENCE

Admission is CLOSED for students who have completed less than 60 hours prior to transfer

For students who have completed 60 hours or more

- CHM 121
- MTH 200, 201, 202
- MTH 220
- PHY 201, 202, 203
- CSC 216
- ENG 101 and 102
- Foreign language recommendation

## ELECTRICAL ENGINEERING

For students who have completed less than 60 hours prior to transfer

- CHM 121
- MTH 200 and 201
- PHY 201
- ENG 101 and 102
- Foreign language recommendation

For students who have completed 60 hours or more, in addition to the above

- EGR 110 or EGR 260 and 262 (both must be taken)
- MTH 202 and 212
- PHY 202 and 203

## ENGINEERING MECHANICS

For students who have completed less than 60 hours prior to transfer

- CHM 121 and 122
- MTH 200 and 201
- PHY 201
- ENG 101 and 102
- Foreign language recommendation

For students who have completed 60 hours or more, in addition to the above

- CSC 121
- MTH 202
- PHY 202 and 203
- EGR 210, 211, 212

## ENGINEERING PHYSICS

For students who have completed less than 60 hours prior to transfer

- CHM 121
- MTH 200 and 201
- PHY 201
- ENG 101 and 102
- Foreign language recommendation

For students who have completed 60 hours or more, in addition to the above

- CSC 121
- MTH 202 and 212
- PHY 202 and 203

## GENERAL ENGINEERING

For students who have completed less than 60 hours prior to transfer

- CHM 121
- MTH 200 and 201
- PHY 201
- ENG 101 and 102
- Foreign language recommendation

For students who have completed 60 hours or more, in addition to the above

- CSC 121
- EGR 110 or EGR 260 and 262 (both must be taken)
- MTH 202 and 212
- PHY 202 and 203
- EGR 210, 211, 212

## INDUSTRIAL ENGINEERING

Admission is CLOSED for students who have completed less than 60 hours prior to transfer

For students who have completed 60 hours or more

- CHM 121
- CSC 121
- EGR 110 or EGR 260 and 262 (both must be taken)
- MTH 200, 201, 202, 212
- MTH 220
- PHY 201, 202, 203
- EGR 210, 211, 212
- ENG 101 and 102
- Foreign language recommendation

## MATERIAL SCIENCE AND ENGINEERING

For students who have completed less than 60 hours prior to transfer

- CHM 121 and 122
- MTH 200 and 201
- PHY 201
- ENG 101 and 102
- Foreign language recommendation

For students who have completed 60 hours or more, in addition to the above

- CSC 121
- MTH 202 and 212

- PHY 202 and 203

### MECHANICAL ENGINEERING

Admission is CLOSED for students who have completed less than 60 hours prior to transfer

For students who have completed 60 hours or more

- CHM 121
- CHEM 122 (not required but recommended)
- CSC 121
- MTH 200, 201, 202, 212
- PHY 201, 202, 203
- EGR 210 or 211 and 212
- ENG 101 and 102
- Foreign language recommendation

### NUCLEAR, PLASMA AND RADIOLOGICAL ENGINEERING

For students who have completed less than 60 hours prior to transfer

- CHM 121
- MTH 200 and 201
- PHY 201
- ENG 101 and 102
- Foreign language recommendation

For students who have completed 60 hours or more, in addition to the above

- CSC 121
- MTH 202 and 212
- PHY 202 and 203
- EGR 210, 211

## **FOREIGN LANGUAGE REQUIREMENT**

All transfer applicants must have completed either two years of one foreign language in high school, or through the second level (2 semesters) of one foreign language in college prior to the desired term of entry. It is strongly encouraged that transfer applicants complete the foreign language graduation requirement before they transfer. For this UIUC college the graduation requirement is satisfied by the completion through the third year of one foreign language in high school, or through the third level (3 semesters) of one foreign language in college.

## **COURSES**

The EGR courses listed in Harper's engineering curriculum are recommended. However, not all courses are required for all engineering majors at the University of Illinois at Urbana-Champaign.

Engineering at UIUC will accept Harper's MTH 212 to satisfy their Differential Equations requirement (Math 385).

## **ACCREDITATION**

Accreditation Board for Engineering and Technology (ABET)