

# **Engineering Pathways Application Process Guide**

## **Step 1: Apply to the community college you plan to attend.**

- The first step in applying to the Engineering Pathways program is to complete the application through your intended community college. Each community college has different processes and requirements. You should follow your community college's process.
- If you have questions about the application process for your community college, you should contact the Admissions office at your community college.

## **Step 2: Complete assessment testing through the partner college.**

### **ALEKS Math Placement Test**

- ALEKS is a required part of the Engineering Pathways application. All applicants must take a proctored ALEKS placement test at your community college.
- Follow your community college's process to take the ALEKS. You can find links to each community college's ALEKS webpages at the end of this document.
- ALEKS is used to determine placement in math at your community college.
- We strongly recommend that you adequately study and prepare for the ALEKS to ensure proper math placement.
- Students who do not place into Calculus I by earning a 76 or higher on the ALEKS math placement test by January 15<sup>th</sup> (early action) are encouraged to wait to apply until after the early action deadline. If you earn below a 76 on the ALEKS, we strongly recommend that you take time to study and review the learning modules before retaking the test. This will give the opportunity to submit your highest possible ALEKS score for consideration in the application review process. All applicants are still encouraged to apply regardless of final ALEKS score.

### **Other Placement Tests**

- Additional placement tests may be required for reading, writing, and/or ESL/ELS.
- All other placement tests need to be complete based on your individual community college's policies.

## **Step 3: Submit the Engineering Pathways application.**

### **Personal Information**

This section includes your personal contact information, which is used to identify applicants and communicate with you about your application.

#### *First Name*

- Please provide your legal first name. This will be used to match documents to your application.
- You will be able to provide your preferred name, if it is different than your legal name, if you enroll in the program.

#### *Email address*

- Please use an email address that you will have access to through the end of Summer 2021. If possible, avoid using your high school email address.

## Applicant Information

### Demographics

- By entering this information, you help us meet reporting obligations. This information will not be used in your admission review but can help us to track the demographics of those participating in the Engineering Pathways program.

### Education

#### *Student ID*

- Enter the student ID number (not email address) provided to you by your community college. If you do not know your student ID number, please contact your community college.

### Academic History

*Have you completed or do you plan to complete any college coursework prior to enrolling in Engineering Pathways – this includes dual-credit high school classes?*

- It is important for us to know if you will have any college credit when you enroll in Engineering Pathways. Please select “Yes” if you will have completed college credits through another college or university or dual-enrollment classes at your high school.
- Students in Engineering Pathways will be required to complete the core curriculum for a letter grade, including calculus, chemistry, and physics, regardless of prior credit.
- There will be a section at the end of the application for you to add a transcript to show college coursework.

*Have you completed at least one year of high school chemistry with grades of C or higher?*

- The standard pre-requisite of enrolling in General Chemistry I is completion of one year of chemistry in high school with C's or better.

*Have you earned a score of 76 or higher on a proctored ALEKS math assessment?*

- This question will allow us to easily track applicants' math placement.
- Each community college has their own guidelines for taking the ALEKS math placement assessment. If you have not yet earned a 76 or higher on the ALEKS, we encourage you to adequately study and prepare and retake the exam if possible.
- All applicants are still encouraged to apply regardless of final ALEKS score.

*Is there anything else the review committee should be aware of regarding your academic history? Please explain.*

- If you have anything in your academic record, such as low grades, you can provide information here. This question is not required, but we encourage you to provide any relevant information to help us to better understand your academic record.

## Essay Questions

*Discuss a setback or failure you have experienced – how you handled it, how it affected you, and lessons learned.*

- Please provide a specific example of a time that you felt like you experienced a setback or failure and what you learned from it. Your example can be in school, an outside activity or job, or in your personal life.
- Things to consider: What steps did you take to try and correct the situation? How would you handle the situation differently? What did you learn from it?

*Why are you a good candidate for the Engineering Pathways program?*

- This question is your opportunity to discuss your unique experiences, interests, and goals and how they make you a good candidate for the Engineering Pathways program. You can also use this question to explain why you feel that the structure of the Engineering Pathways will help you achieve your goals.
- Things to consider: What about your interests, experiences, and goals make you a good fit for Engineering Pathways? What do you know about Engineering Pathways and why do you feel it is a good option for you?

*Reflect on something you would like to admissions committee to know about you.*

- You can use this question to provide any information that you feel is important for the admissions committee to know about you that you have not yet shared.
- Things to consider: Is there anything that you want the admissions committee to know about you that you have not been able to explain in other sections? What is something important about you, as an applicant, that you feel is relevant to your application?

## Areas of Interest

This section is used to help us understand which major(s) you may be interested in pursuing at UIUC. You are not applying directly to the selected major(s) and will be admitted as an undeclared student. You can select as many majors as you want. If you do not yet know which Engineering majors you may want to study, you can select "Unsure at this time".

You can find descriptions of each of the Grainger Engineering transfer majors below.

## Document Submission

If you have information to share (e.g. college coursework, GED completion certificate) which will not be provided on your high school transcript(s) please submit those documents here.

If you have earned grades in college coursework, please upload a copy of your college transcript. Unofficial college transcripts are acceptable.

## Summary

Please review your application to ensure that all information is complete and accurate. Once your application is submitted, you will need to submit official high school transcripts to [engineeringpathways@illinois.edu](mailto:engineeringpathways@illinois.edu).

## SUMMARY OF MAJORS

**AEROSPACE ENGINEERING** focuses on the research, development, integration, and production of aerospace systems and aerodynamics, design, and performance of air and spacecraft and their propulsion systems. This major may be for you if you enjoy working in teams to create large scale systems that incorporate many inter-disciplinary engineering programs. Aerospace engineers will have experience in mechanical, electrical, computer, material, and aerospace applications.

**AGRICULTURAL AND BIOLOGICAL ENGINEERING** applies scientific and engineering principles to production systems involving agriculture, food, environment, and energy; natural resources; environmental protection and control for plants, animals, and humans; and related biological systems. This major may be for you if you are interested in agricultural productivity, sustainability, off-road equipment, erosion control, renewable fuel sources, indoor environmental control, food or fuel engineering.

**CIVIL ENGINEERING** applies the basic principles of science in conjunction with mathematical and computational tools to solve problems associated with developing and sustaining civilized life on our planet. Civil engineering works are generally one-of-a kind projects, often grand in scale, and they usually require cooperation among professionals of many different disciplines. This major may be for you if you are interested in designing and building structures and infrastructure systems such as skyscrapers, bridges, tunnels, highways, airports, railroads, water treatment plants, waterways, power plants, structures for wind turbines, transmission lines, dams, and desalination plants.

**COMPUTER ENGINEERING** is the design and implementation of computing systems at all levels, from circuits and architecture to networking, distributed systems, and artificial intelligence. This major may be for you if you enjoy understanding, designing, and working with computers and their hardware.

**COMPUTER SCIENCE** is the study of theory, design, and applications of digital computers, software design, and informational processing techniques. This major may be for you if you are creative, logical, and a good problem solver. Since most problems are solved using computers, you should be comfortable with—well, actually excited about—getting computers to obey your every whim.

**ELECTRICAL ENGINEERING** involves all electrical and associated phenomena, whether in wires, devices, space, the human body, or other mediums. It has applications in electrical power, communications, information technology, nanotechnology, and biotechnology. This major may be for you if you enjoy tinkering and dream of making something new.

**ENGINEERING MECHANICS** provides the building blocks of statics, dynamics, strength of materials, and fluid dynamics, and is the discipline devoted to the solution of mechanics problems through the integrated application of mathematical, scientific, and engineering principles. This major may be for you if you are interested in a program that emphasizes analytical skills, breadth, and research preparedness.

**ENGINEERING PHYSICS** studies, measures, and manipulates the fundamental interactions of matter, energy, space, and time to solve scientific mysteries and reveal the workings of nature. Physics has produced the science behind many technologies, including: superconducting magnets for MRI machines; cell phones; supermarket scanners; particle accelerators; and fiber optic communications. This major may be for you if you have a passion for knowledge and want the keys to a wide range of challenging and fulfilling careers.

**INDUSTRIAL ENGINEERING** solves problems through the integration of engineering and business principles. Industrial systems engineers work to improve performance and productivity using optimization approaches and problem solving through a systems approach. They often serve as a link between engineering and management. This major may be for you if you are interested in streamlining processes; eliminating waste of time, money, materials, energy, and other commodities; evaluating and reducing strain on workers and the environment; and saving companies money.

**MATERIALS SCIENCE AND ENGINEERING** is an interdisciplinary field of study that involves taking courses in chemistry, physics, and engineering to build a fundamental understanding of materials. Advanced materials are instrumental in major industries such as aerospace, automotive, biomedical, chemical, electronics, energy, and telecommunications. This major may be for you if you want to be at the forefront of technology and make things smaller, faster, stronger, and smarter.

**MECHANICAL ENGINEERING** is among the most diverse of the engineering fields, applying mathematical, scientific, and engineering principles to study forces acting on bodies of solid or fluid material and the resulting dynamic motion of those bodies. It is concerned with anything that moves: how to build it and how to control it. This major may be for you if you are interested in how the world around you moves and changes.

**NUCLEAR, PLASMA, AND RADIOLOGICAL ENGINEERING** focuses on the development and use of nuclear energy and radiation sources for a wide variety of applications in energy production, materials processing and science, and for biomedical and industrial uses. This major may be for you if you have an interest in current and developing fission and fusion technology; ensuring homeland security through detection technology; the big picture of energy production and consumption; making computers, cell phones, game consoles continue to get better, cheaper, and faster every year; radiological technology; risk assessment, analysis, and management.

**SYSTEMS ENGINEERING AND DESIGN** provides an interdisciplinary, broad, and solid foundation in math, science, and engineering fundamentals. It integrates principles of business, new technology, and entrepreneurship throughout the curriculum. This major may be for you if you like multiple engineering disciplines. Systems engineers must be able to lead people and make many decisions while having the ability to take risks and deal with the business landscape.

## **ALEKS Math Placement Links**

College of DuPage

<https://cod.edu/academics/testing/tests/placement/math/index.aspx>

College of Lake County

<https://www.clcillinois.edu/student-services/tutoring-and-academic-support/testing-center/exams-offered/mathplacement>

Elgin Community College

<https://elgin.edu/admissions/testing-services/placement-tests/math-testing/aleks/>

Harper College

<https://www.harpercollege.edu/testing/aleks.php>

Lewis & Clark Community College

[https://www.lc.edu/College\\_Placement\\_Test/](https://www.lc.edu/College_Placement_Test/)

Moraine Valley Community College

<https://www.morainevalley.edu/academics/testing-services/placement-tests/>

McHenry County College

<https://www.mchenry.edu/aleks/>

Oakton Community College

[https://www.oakton.edu/student-services/testing/new\\_student/aleks\\_math\\_placement.php](https://www.oakton.edu/student-services/testing/new_student/aleks_math_placement.php)

Parkland College

<https://www.parkland.edu/Main/About-Parkland/Department-Office-Directory/Assessment-Center/Placement-Tests/Math-Placement>

Wilbur Wright College

<https://www.ccc.edu/colleges/wright/services/Pages/Placement-Tests.aspx>