**Academic Pathways Of People Learning Engineering Survey**

*(APPLES)*

**Page 1 of 7**

For best viewing results, please maximize your browser window.

**Questions marked with a * are required.**

*1. What school are you currently attending?*

- INSERT NAME OF SCHOOL
- Other: [ ]
- I prefer not to answer

*2. What is your current academic standing?*
*3. **When you entered this institution were you:**

- A first-time college student
- Returning or non-traditional college student
- A transfer student from a two-year institution
- A transfer student from a four-year institution
- A transfer student from an institution that participates in a 3 + 2 engineering program
- I prefer not to answer

*4. **What were you most interested in majoring in when you first came to university? (Choose one)**

- Arts and Humanities
- Engineering
- Math and Natural Sciences
- Physical Sciences
- Social Sciences
- Other
- I prefer not to answer

*5. **What is your current major or first choice of major? (Mark one)**

- Aerospace Engineering
- Chemical Engineering
- Civil Engineering
- Electrical Engineering
- Industrial Engineering
- Materials and Metallurgical Engineering
- Mechanical Engineering
- Computer Science/Engineering (in engineering)
6. What is your second choice of major or second major/minor? (Mark one or N/A if not applicable)

- Aerospace Engineering
- Chemical Engineering
- Civil Engineering
- Electrical Engineering
- Industrial Engineering
- Materials and Metallurgical Engineering
- Mechanical Engineering
- Computer Science/Engineering (in engineering)
- Computer Science (non-engineering)
- Other Engineering:

7. Do you intend to complete a major in engineering?
*8. Do you intend to practice, conduct research in, or teach engineering for at least 3 years after graduation?

- Definitely not
- Probably not
- Not sure
- Probably yes
- Definitely yes
- *I prefer not to answer*

(APPLES)

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**Questions marked with a * are required.**

We are interested in knowing why you are or were studying engineering. Please indicate below the extent to which the following reasons apply to you:

<table>
<thead>
<tr>
<th>Question</th>
<th>Not a Reason</th>
<th>Minimal Reason</th>
<th>Moderate Reason</th>
<th>Major Reason</th>
<th>I prefer not to answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology plays an important role in solving society’s problems</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engineers make more money than most other professionals</td>
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</tr>
<tr>
<td>My parent(s) would disapprove if I chose a major other than engineering</td>
<td></td>
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</tr>
<tr>
<td>Engineers have contributed greatly to fixing problems in the world</td>
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<tr>
<td>Engineers are well paid</td>
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<td></td>
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</tr>
<tr>
<td>My parent(s) want me to be an engineer</td>
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<tr>
<td>An engineering degree will guarantee me a job when I graduate</td>
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<tr>
<td>A faculty member, academic advisor, teaching assistant or other university affiliated person has encouraged and/or</td>
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</tr>
</tbody>
</table>
inspired me to study engineering
A non-university affiliated mentor has encouraged and/or inspired me to study engineering
A mentor has introduced me to people and opportunities in engineering
I feel good when I am doing engineering
I like to build stuff
I think engineering is fun
Engineering skills can be used for the good of society
I think engineering is interesting
I like to figure out how things work

*10. Please indicate how strongly you disagree or agree with each of the statements:

<table>
<thead>
<tr>
<th>Statement</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>I prefer not to answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creative thinking is one of my strengths</td>
<td></td>
<td></td>
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<tr>
<td>I am skilled at solving problems that can have multiple solutions</td>
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<tr>
<td>A mentor has supported my decision to major in engineering</td>
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</tr>
</tbody>
</table>

*11. Rate yourself on each of the following traits as compared to your classmates. We want the most accurate estimate of how you see yourself.

<table>
<thead>
<tr>
<th>Trait</th>
<th>Lowest 10%</th>
<th>Below Average</th>
<th>Average</th>
<th>Above Average</th>
<th>Highest 10%</th>
<th>I prefer not to answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self confidence (social)</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Leadership ability</td>
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<tr>
<td>Public speaking ability</td>
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<tr>
<td>Math ability</td>
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<tr>
<td>Science ability</td>
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<td></td>
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<tr>
<td>Communication skills</td>
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<td></td>
</tr>
<tr>
<td>Ability to apply math and science principles in solving real world problems</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Business ability</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Ability to perform in teams</td>
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<td></td>
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<tr>
<td>Critical thinking skills</td>
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</tr>
</tbody>
</table>
12. How important do you think each of the following skills and abilities is to becoming a successful engineer?

- Self confidence (social)
- Leadership ability
- Public speaking ability
- Math ability
- Science ability
- Communication skills
- Ability to apply math and science principles in solving real-world problems
- Business ability
- Ability to perform in teams

I prefer not to answer

13. Please rate your satisfaction with this institution on each aspect of campus life listed below. (Mark N/A if you do not have experience with this aspect.)

- Quality of instruction
- Availability of instructors
- Quality of advising by instructors
- Academic advising

Very Dissatisfied Dissatisfied Satisfied Very Satisfied N/A I prefer not to answer

14. During the current school year, what portion of your classes have used the following teaching methods?

- Individual projects
- Team projects

None Very little Less than half About half More than half All or nearly all I prefer not to answer

15. Please rate the overall quality of your collegiate experience so far:
The survey title and other general fields are on the **General** tab. Individual survey questions are added and modified on the **Questions** tab. Questions may be re-ordered or deleted from the **Order** tab. You may see a preview of your survey at any time, by going to the **Preview** tab. If you have no further changes click **Finish** to go back to the Management Interface.

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**Questions marked with a * are required.**

*16. Think about the engineering, math or science classes you are taking/have taken during the current school year. Indicate how often you:

(Mark N/A if you have not taken any engineering related classes.)

<table>
<thead>
<tr>
<th>Action</th>
<th>Never</th>
<th>Rarely</th>
<th>Occasionally</th>
<th>Frequently</th>
<th>N/A</th>
<th>I prefer not to answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Came late to engineering class</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skipped engineering class</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Turned in engineering assignments that did not reflect your best work</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Turned in engineering assignments late</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
17. **Think about the liberal arts classes (not engineering, math, or science classes) you are taking/have taken during the current school year. Indicate how often you:**

(Mark N/A if you have not taken any liberal arts classes.)

<table>
<thead>
<tr>
<th>Event</th>
<th>Never</th>
<th>Rarely</th>
<th>Occasionally</th>
<th>Frequently</th>
<th>N/A</th>
<th>I prefer not to answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Came late to liberal arts class</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Skipped liberal arts class</td>
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<td></td>
</tr>
<tr>
<td>Turned in liberal arts assignments that did not reflect your best work</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Turned in liberal arts assignments late</td>
<td></td>
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<td></td>
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</tr>
</tbody>
</table>

18. **How well are you meeting the workload demands of your coursework?**

- I am meeting all of the demands easily
- I am meeting all of the demands, but it is hard work
- I am meeting most of the demands, but cannot meet some
- I can meet some of the demands, but cannot meet most
- I cannot meet any of the demands
- I prefer not to answer

19. **How stressed do you feel in your coursework right now?**

- No stress
- Moderately low stress
- Moderate stress
- Moderately high stress
- High stress
- I prefer not to answer

20. **During the current school year, how much pressure have you felt with each of the following?**

<table>
<thead>
<tr>
<th>Event</th>
<th>No Pressure</th>
<th>Moderately Low Pressure</th>
<th>Moderate Pressure</th>
<th>Moderately High Pressure</th>
<th>High Pressure</th>
<th>I prefer not to answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course load (amount of course material being covered)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Course pace (the rate at which the course material is being covered)

Balance between social and academic life

*21. During the current school year, how often have you interacted with your instructors (faculty, teaching assistants) in your engineering, math, or science classes (e.g. by phone, e-mail, IM, or in person)?
(Mark N/A if you have not taken any engineering, math, or science classes this year.)

Instructors during class
- Never
- Rarely
- Occasionally
- Often
- Very often
- N/A
- I prefer not to answer

Instructors during office hours

Instructors outside of class or office hours

*22. Some people are involved in non-engineering activities on or off campus, such as hobbies, civic or church organizations, campus publications, student government, social fraternity or sorority, sports, etc. How important is it for you to be involved in these kind of activities?

- Not important
- Somewhat important
- Very important
- Essential
- I prefer not to answer

*23. How often are you involved in the kinds of non-engineering activities described above?

- Never
- Rarely
- Occasionally
- Frequently
- I prefer not to answer
*24. **What is your level of involvement in student engineering activities such as engineering clubs or societies?**

- No involvement
- Limited involvement
- Moderate involvement
- Extensive involvement
- *I prefer not to answer*

*25. **Since coming to college, have you had any research experience(s)?** (Mark one)

- No
- Yes, in engineering related areas
- Yes, in non-engineering related areas
- Yes, in both engineering and non-engineering related areas
- *I prefer not to answer*
Survey Design

Help

This is a preview of how this survey will look. In the preview the survey navigation buttons are inactive, use the section number buttons to view different sections. Some navigation buttons may not appear on your final survey, depending on what access it is assigned. The survey will use the background color of the document in which it is embedded. If you have no further changes click Finish at the bottom of this page.

Section: 1 2 3 4 5 6 7

ACADEMIC PATHWAYS OF PEOPLE LEARNING ENGINEERING SURVEY

(APPLES)

For best viewing results, please maximize your browser window.

QUESTIONS MARKED WITH A * ARE REQUIRED.

*26. Before college, how much knowledge did you have about the engineering profession?

- No knowledge
- Limited knowledge
- Moderate knowledge
- Extensive knowledge
- I prefer not to answer

*27. Since entering college, how much knowledge have you gained about the engineering profession?

- No knowledge
- Limited knowledge
- Moderate knowledge
- Extensive knowledge
- I prefer not to answer
28. **How much exposure have you had to a professional engineering environment as a visitor, intern, or employee?**

- [ ] No exposure
- [ ] Limited exposure
- [ ] Moderate exposure
- [ ] Extensive exposure
- [ ] I prefer not to answer

29. **How did you gain your knowledge about the engineering profession? (Mark all that apply)**

- [ ] From being a visitor
- [ ] From being a co-op student or intern
- [ ] From being an employee
- [ ] From a family member
- [ ] From a close friend
- [ ] From school-related experiences (i.e., a professor or class)
- [ ] Other: [ ]
- [ ] I prefer not to answer

30. **Do any of your immediate family members (parents, siblings) hold an engineering degree?**

- [ ] No
- [ ] Yes
- [ ] I prefer not to answer

31. **Do you see yourself continuing in an engineering major?**

- [ ] No - I am NOT majoring or planning to major in engineering
- [ ] Yes
- [ ] I prefer not to answer

32. **Do you see yourself pursuing a career in engineering?**
*33. **How likely is it that you would do each of the following after graduation?**

<table>
<thead>
<tr>
<th></th>
<th>Definitely not</th>
<th>Probably not</th>
<th>Not sure</th>
<th>Probably yes</th>
<th>Definitely yes</th>
<th>I prefer not to answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work in an engineering job</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work in a non-engineering job</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Go to graduate school in an engineering discipline</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Go to graduate school outside of engineering</td>
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<td></td>
</tr>
</tbody>
</table>

*34. **Do you have any concerns about your ability to finance your college education?**

- None (I am confident that I will have sufficient funds)
- Some (but I probably will have sufficient funds)
- Major (I have funds but will graduate with significant debt)
- Extreme (not sure if I will have sufficient funds to complete college)
- I prefer not to answer

*35. **What is your cumulative grade point average?**

- A or A+ (i.e., 3.9 or above on a 4.0 scale)
- A- (3.5-3.8)
- B+ (3.2-3.4)
- B (2.9-3.1)
- B- (2.5-2.8)
- C+ (2.2-2.4)
- C (1.9-2.1)
- C- or lower (less than 1.5)
- I prefer not to answer
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**Questions marked with a * are required.**

**36. Your sex:**

- Female
- Male
- I prefer not to answer

**37. What is your racial or ethnic identification? (Mark all that apply)**

- American Indian or Alaska Native
- Asian or Asian American
- Black or African American
- Hispanic or Latino/a
- Native Hawaiian or Pacific Islander
- White
- Other: __________
38. **How old are you? (Mark one)**
   - 17 or younger
   - 18-19
   - 20-23
   - 24-29
   - 30-39
   - 40-55
   - over 55
   - I prefer not to answer

39. **Are you:**
   - A U.S. Citizen
   - A Permanent Resident of the U.S.
   - Other
   - I prefer not to answer

40. **Were you born in the United States?**
   - Yes
   - If no, at what age did you immigrate to the U.S: [ ]
   - I prefer not to answer

41. **Did one or more of your parents/guardians immigrate to the United States?**
   - Yes
   - No
   - I prefer not to answer
<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>42. Is English your first language?</td>
<td>Yes, No, I prefer not to answer</td>
</tr>
<tr>
<td>43. Are you a first-generation college student (first in your immediate family to attend college)?</td>
<td>Yes, No, I prefer not to answer</td>
</tr>
<tr>
<td>44. Are you enrolled primarily as a:</td>
<td>Full-time student, Part-time student, I prefer not to answer</td>
</tr>
<tr>
<td>45. Which of the following best describes where you are living now while attending college?</td>
<td>Dormitory or other campus housing, Residence (house, apartment, etc.) within walking distance of the institution, Residence (house, apartment, etc.) within driving distance of the institution, I prefer not to answer</td>
</tr>
<tr>
<td>46. Would you describe your family as: (Mark one)</td>
<td>High income, Upper-middle income, Middle income, Lower-middle income, Low income, I prefer not to answer</td>
</tr>
</tbody>
</table>
**47. What is the highest level of education that your mother completed? (Mark one)**

- Did not finish high school
- Graduated from high school
- Attended college but did not complete degree
- Completed an Associate degree (AA, AS, etc.)
- Completed a Bachelor degree (BA, BS, etc.)
- Completed a Masters degree (MA, MS, etc.)
- Completed a Doctoral or Professional degree (JD, MD, PhD, etc.)
- Don't know or not applicable
- *I prefer not to answer*

**48. What is the highest level of education that your father completed? (Mark one)**

- Did not finish high school
- Graduated from high school
- Attended college but did not complete degree
- Completed an Associate degree (AA, AS, etc.)
- Completed a Bachelor degree (BA, BS, etc.)
- Completed a Masters degree (MA, MS, etc.)
- Completed a Doctoral or Professional degree (JD, MD, PhD, etc.)
- Don't know or not applicable
- *I prefer not to answer*
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**Questions marked with a * are required.**

*49. Of the twenty-three design activities below, please put a check mark next to the SIX MOST IMPORTANT.*

- [ ] Abstracting
- [ ] Brainstorming
- [ ] Building
- [ ] Communicating
- [ ] Decomposing
- [ ] Evaluating
- [ ] Generating alternatives
- [ ] Goal setting
- [ ] Identifying constraints
- [ ] Imagining
- [ ] Iterating
- [ ] Making decisions
- [ ] Making trade-offs
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*(APPLES)*

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50. **Is there anything you want to tell us about your experiences in engineering that we haven't already asked you about?**