

Info for Using the ESC Scale and the U-ESQ Measure

Before Use: Scoring and Interpreting the Scales

After data collection, the by simply following these steps:

1. Score individual items as:

1=Strongly disagree

2=Disagree

3=Slightly disagree

4=Slightly agree

5=Agree

6=Strongly agree

2. Reverse the scoring of items so that for each item, a score of “strongly agree” implies normalized high stress culture or presence of stressors and issues. Items that must be reverse scored are indicated with an “[R]” before item text. A simple formula to score these is to take 7 minus the response for each “[R]” item.
3. Score factors by taking the sum of the scores of each item in the factor and dividing by the number of items answered for each factor - this way, the scales are set relative to each other from 1-6, with a neutral interpretation at 3.5.

Engineering Stress Culture (ESC) Scale

Prompt:

Please answer the following questions related to your experiences as an undergraduate engineering student:

To what extent do you agree with the following statements?

Response Options:

6-point Likert type scale with options:

Strongly disagree, Disagree, Slightly disagree, Slightly agree, Agree, Strongly agree

Items:

1. **[R]** Engineering students in my college/department are relaxed
2. **[R]** Engineering students can succeed while having a positive work-life balance
3. Engineering students will NOT succeed unless they are almost always working
4. I have felt pressure to stay up late in order to complete engineering work
5. **[R]** I RARELY have to stay up late in order to complete engineering coursework
6. Engineering students do NOT prioritize taking care of themselves (e.g., hygiene, exercise, etc.)
7. **[R]** Engineering students often engage in hobbies and activities outside of engineering coursework
8. **[R]** Engineering students are able to live balanced and healthy lifestyles (e.g. work-life balance, time for physical and mental wellness activities, etc.)
9. I do NOT have time for wellness activities (such as seeking counseling, meditating, or engaging in other therapeutic/relaxing activities)
10. **[R]** I have time for activities outside of classwork that support my professional development (e.g. student organizations, leadership opportunities, research, etc.)

Undergraduate Engineering Stressors Questionnaire (U-ESQ)

Prompt:

Please answer the following questions related to your experiences as an undergraduate engineering student:

To what extent do you agree with the following statements?

Response Options:

6-point Likert type scale with options:

Strongly disagree, Disagree, Slightly disagree, Slightly agree, Agree, Strongly agree

Items:

Subscale Factor 1 (Identity-Related Engineering Stressors)

1. An engineering professor has made me feel uncomfortable because of my gender or race
2. An engineering TA has made me feel uncomfortable because of my gender or race
3. I have experienced an engineering professor being intimidating and/or dismissive
4. I have experienced an engineering TA being intimidating and/or dismissive
5. **[R]** My engineering classes have respectful environments towards students from diverse backgrounds
6. Another engineering student has made me uncomfortable because of my gender or race
7. I have experienced an engineering student being intimidating and/or dismissive

Subscale Factor 2 (Programmatic Mental Health Communication Issues)

8. My engineering college/department has NOT informed me of how I can receive support for mental health issues
9. Engineering students do NOT often seek counseling for mental health issues
10. My engineering program has negatively impacted my mental health
11. **[R]** My engineering college/department is supportive of students experiencing mental health issues

12. Mental health issues are NOT often discussed among engineering faculty or students
13. My engineering college/department does NOT emphasize the importance of mental health
14. My engineering college/department is NOT accommodating if a student needs help

Subscale Factor 3 (Expectations of Academic Stressors)

15. Engineering courses are designed such that students are set up to get low grades
16. My engineering college/department wants me to fail or drop out
17. My engineering professors are trying to weed out the “weak students”
18. My engineering college/department only cares about job percentages and retention rates
19. Engineering professors expect students to compete against each other
20. Engineering professors intentionally create stressful environments for students
21. **[R]** My engineering college/department does NOT care about job percentages and retention rates

Subscale Factor 4 (Stressors from Peer Comparisons)

22. Most engineering students learn concepts faster than me
23. Most engineering students are ahead of me in terms of STEM skills
24. I DON'T feel like I'm falling behind other engineering students in terms of my skills and knowledge
25. **[R]** I feel like I'm falling behind other engineering students in terms of my skills and knowledge
26. **[R]** Most engineering students are behind me in terms of STEM skills

Subscale Factor 5 (Engineering Prestige Stressors)

27. Engineering students experience higher levels of stress compared to other majors on campus
28. Engineering students do much more work compared to students in other majors at my institution

- 29. Engineering students are respected by other majors on campus for their hard work and accomplishments
- 30. Mental health issues are more common for engineering students compared to other majors on campus
- 31. **[R]** Engineering students experience the same or lower levels of stress compared to other majors on campus

Subscale Factor 6 (Preparation Stressors for Engineering Careers)

- 32. **[R]** I believe that other students in my engineering program can succeed
- 33. **[R]** Students in my engineering college/department are able to find internships
- 34. **[R]** Students in my engineering college/department are able to find research opportunities
- 35. **[R]** I am confident my engineering program will prepare me for my desired career path
- 36. I am unsure that my engineering program will prepare me for my desired career path

Subscale Factor 7 (Competition Stressors for Engineering Careers)

- 37. I worry about competing against my peers in the job market or for internships
- 38. I feel like I am NOT doing enough extracurriculars compared to other engineering students
- 39. I find it challenging to manage time between engineering coursework and extracurricular activities
- 40. When I complete my degree, I will have to compete against other engineers for jobs/positions more than I compete with my peers now
- 41. I am not sure what life will be like once I enter the workforce
- 42. **[R]** I know what life will be like once I enter the workforce

Subscale Factor 8 (Experiences with Engineering Professors)

- 43. **[R]** My engineering professors assign homework and projects that benefit my learning
- 44. Engineering professors are NOT approachable
- 45. **[R]** Engineering professors promote student well-being
- 46. **[R]** Engineering professors know my name and acknowledge me

47. **[R]** My engineering professors offer welcoming and helpful office hours

48. Engineering professors inhibit student well-being