Human Systems Engineering, MS

ECAPSYCHMS

Program Description

Degree Awarded: MS Human Systems Engineering

The MS program in human systems engineering in the Ira A. Fulton Schools of Engineering provides students with a deep understanding of the science of human performance and experience using methods and tools to apply this understanding to design and to problem solve in a wide variety of domains such as product usability, learning design, sports performance, cyber security, human-robot teaming, and workplace and patient safety.

A broad range of professions needs experts in human factors to work on problems that involve an understanding of human performance. Students gain real-world experience by tackling projects that examine cutting-edge issues such as cell phones as a source of driver distraction, detection of improvised explosive devices, process optimization in health care, and even control of unmanned vehicles.

Interest areas include user experience, aviation human factors, cognitive performance, consumer psychology, transportation human factors, patient safety, effective teamwork, human-robot teaming, health psychology, learning optimization, social cognition, threat detection and sports psychology.

Recent graduates are working at places like Intel, Boeing, GoDaddy, Mayo Clinic, PayPal, Motorola, Google and the Air Force Research Lab. Recipients of this ASU master’s degree also have gone on to pursue doctorates at ASU and other prestigious institutions.

At a Glance

- **College/School:** Ira A. Fulton Schools of Engineering
- **Location:** Polytechnic campus

Accelerated Program Options
This program allows students to obtain both a bachelor's and master's degree in as little as five years. It is offered as an accelerated bachelor's and master's degree with:

- Human Systems Engineering, BS
- Human Systems Engineering (User Experience), BS
- Industrial and Organizational Psychology, BS

Acceptance to the graduate program requires a separate application. During their junior year, eligible students will be advised by their academic departments to apply.

**Degree Requirements**

30 credit hours and a portfolio, or
30 credit hours and a thesis, or
30 credit hours including the required applied project course (HSE 593)

**Required Core (9 credit hours)**

- HSE 520 Methods and Tools in Applied Cognitive Science (3)
- HSE 542 Foundations of Human Systems Engineering (3)
- PSY 530 Intermed Statistics (3)

**Electives and Research (12-18 credit hours)**

**Other Requirement (3 credit hours)**

- HSE 598 Data Analytics (3)

**Culminating Experience (0 or 6 credit hours)**

- HSE 593 Applied Project (6) OR
- HSE 599 Thesis (6) OR
- Portfolio (0)

**Additional Curriculum Information**

Students have the option of doing a thesis (with industry guidance), an applied project to develop and demonstrate professional knowledge and skills, or a portfolio as the culminating experience.

Students selecting the thesis option will, under faculty supervision, work on the thesis for at least one calendar year. The first three thesis credits will be devoted to developing an idea and preparing a proposal for approval by a faculty committee. The next three credits will allow for preparing the details of research design and data collection for the thesis (materials, computer programs, experimental test beds, questionnaires, etc.). The final six credits will be devoted to collecting and analyzing data and writing and revising the thesis under the direction of the student's committee chair. Students will defend the thesis in an oral examination.
In cases in which a student is engaged in a project initiated by industry, they may opt for the applied project option. Students selecting the applied project option will, under faculty supervision and guided by industry, carry out the applied project in a calendar year in which the 12 credit hours outside of the core are allocated to a combination of research, applied project and report writing appropriate to the goals of the student and the industry partner. In all cases, the project will culminate in a substantial written report followed by a comprehensive oral examination covering the project and other materials from required courses.

The portfolio should demonstrate a high level of mastery of the principles and practice of human systems engineering through a compilation of work that the student has completed through the course of their graduate study. While the specific details will depend on the student's specialization, all portfolios must describe three notable projects or academic accomplishments that students have completed through the course of graduate study that illustrate the evolution and advancement of the student's technical expertise and mastery of the field of human systems engineering. Submission will include a written document to include an overview of graduate experience and descriptions of projects presented in the portfolio.

Applied project students take 12 elective credit hours, thesis students take nine elective credit hours plus three credit hours of HSE 592 Research, and portfolio students take 18 elective credits.

For the "other requirement," HSE 598 Data Analytics is required. Other courses may be used with approval of the academic unit.

**Admission Requirements**

Applicants must fulfill the requirements of both the Graduate College and the Ira A. Fulton Schools of Engineering.

Applicants are eligible to apply to the program if they have earned a bachelor's or master's degree in psychology or a related field (including engineering, computer science or business) from a regionally accredited institution.

All applicants must submit:

1. graduate admission application and application fee
2. official transcripts
3. official GRE general exam scores
4. statement of purpose describing professional and academic aspirations
5. three letters of recommendation
6. proof of English proficiency
Additional Application Information
An applicant whose native language is not English (regardless of current residency) must provide proof of English proficiency.

International applicants can find complete information on the English proficiency exams and other required documents on the Admission Services website: https://poly.engineering.asu.edu/hse/ms/.

The letters of recommendation should be from college professors, employers (in a human factors-related field) or a combination of both academic and professional references.

Applicants to this program generally have completed an undergraduate course in statistics.

Only complete applications will be reviewed.

Application Deadlines

Fall
Spring

Contact Information

Human Systems Engineering | WANER 101
polygrad@asu.edu | 480-727-4723
Admission Deadlines