ENGINEERING, ETHICS AND SOCIETY - CERTIFICATE

The Certificate in Engineering, Ethics & Society (EES) leads students to courses that help them understand engineering in different contexts. Students select courses in consultation with the co-directors and engage with contemporary debates, themes, and issues related to engineering and applied science.

Through participation in the certificate, students will pair broad, complex questions with more specific inquiry. For example:

- What role should engineers play in policy-making?
- How can engineers help build workable relationships between scientific advancements and contemporary society?
- What are the likely benefits and risks of biomedical advancements, especially genetic engineering?
- How can engineers help offset worldwide environmental degradation?
- What is the appropriate role of AI in the workplace? In our daily lives?

Students will meet with one of the certificate's co-directors to identify four 3-credit courses (12 hrs total) that will help them explore questions that are relevant to their own particular interests.

The list of possible courses is open-ended, but might include:

- Courses that view engineering in social, economic and legal contexts.
- Courses that study science and technology in the past, thereby illuminating their influence in the present.
- Courses that explore the environmental impact of STEM innovation.
- Courses that explore the arts and humanities as they relate to engineering design.

Requirements

Eligibility

To begin the certificate, students must be in good academic standing (https://www.colorado.edu/registrar/students/your-information-records/academic-standing/) at CU Boulder and must complete a certificate of enrollment with Dr. Sarah Stanford-McIntyre of the Herbst Program for Engineering, Ethics & Society.

To complete the certificate, students must submit a certificate completion form to Dr. Stanford-McIntyre.

Program Requirements

Students must complete 12 credits, including four courses (at least one upper-division) with a minimum grade in each course of C+.

Code	Title	Credit Hours
Required Courses		
Great Books Seminar		
Choose one:		3
ENES 1010	Humanity in a Technological Age	
ENES 3100	Ethical Awareness for Engineers	
EHON 1151	Critical Encounters	
STEM & H&SS Intersection		
Choose one:		3
ENES 1850	Engineering in History: The Social Impact of Technology	
ENES 2020	The Meaning of Information Technology	
ENES 2120	History of Modern Science from Newton to Einstein	
ENES 2130	History of Modern Technology from 1750 to the Atomic Bomb	
ENES 2210	Modern Science and Technological Society	
ENES 2360	Gaining a Global State of Mind for Effective Engineering Practice	
ENES 3360	Gaining a Global State of Mind for Effective Engineering Practice	
ENES 3430	Ethics of Genetic Engineering: A Multidisciplinary Approach	
ENLP 2000	Leadership, Fame and Failure	
ENLP 4000	The Empire of Modern Science	
INFO 3101	History of Computing and Information	
Additional coursework		
Additional Herbst or EHON (Engineering Honors) course [1]		3
Course in Humanities or Social Science from the College of Arts & Sciences linked to EES (Engineering, Ethics & Society) themes [2]		3
Total Credit Hours		**12**

[1] This could be an additional course from the list above, or it could include Herbst or EHON Special Topics courses, Herbst Global Seminars or Global Intensives, or other Herbst courses.

[2] Students must confer with the EES Certificate Director to determine the suitability of a particular course.