

ENGINEERING FOR SUSTAINABLE DEVELOPMENT, MINOR

Engineers will be increasingly called upon to help devise solutions to the tremendous problems of poverty, inequality, and social and environmental dislocation that afflict major parts of the globe in the 21st century. Working as an engineer in this context involves negotiating highly complex social, economic, and political realities and dealing with a wide range of institutions and actors, including national and local governments, multilateral lenders such as the World Bank, diverse non-governmental organizations (NGOs), and local communities. It also increasingly involves working in interdisciplinary teams with social scientists, public health and medical workers, humanitarian aid workers, bankers, politicians, and the like. "Sustainable" development implies a development path that is socially equitable, culturally sensitive, and environmentally appropriate over a multi-generational time frame.

The value of this program will be enhanced by some form of hands-on experiential project, whether at a field site in a developing country, in support of field workers in other divisions of the university, or in distressed communities in Baltimore. This experience is not required for the minor. It might take one of the following forms:

- Fieldwork in collaboration with Engineers Without Borders.
- Providing technical support to "clients" at Johns Hopkins (for example, at the School of Public Health) who are engaged in field projects in developing countries. This might involve, for example, developing dedicated software for data management, devising robust and easy-to-use test kits for environmental toxins or medical conditions, or facilitating interactive analysis and project planning between researchers in Baltimore and the field personnel.
- Participating in programs being developed by the JHU Center for Social Concern (<http://studentaffairs.jhu.edu/socialconcern/>), with its growing service-learning component. This would allow students to work on projects in Baltimore which offers an ample field for identifying and responding to social and environmental problems.

The minor in Engineering for Sustainable Development exposes engineering students to some of the key issues related to development, methods of information-gathering in diverse and difficult settings, and working effectively with non-engineers on complex problems. The minor is open to undergraduates in any of the engineering disciplines in the Whiting School of Engineering. Students in Arts & Sciences may also pursue the minor with the permission of the program director.

For further information, please contact the minor advisor, Professor Shere Abbott (sabbot6@jhu.edu).

The information below describes the academic requirements for students entering JHU as degree-seeking students in Fall 2025. Students who entered JHU as degree-seeking students prior to Fall 2025 should view the appropriate archived catalogue (<https://e-catalogue.jhu.edu/archive/>).

The minor in Engineering for Sustainable Development requires 21 credits. Grades of C- or higher are required. No Satisfactory/Unsatisfactory (S/U) grade will be accepted. With the approval from the minor advisor, students who participate in a study abroad program for a

semester can use the experience to count in place of one of the required courses.

MINOR REQUIREMENTS INTRODUCTORY COURSE

Code	Title	Credits
EN.570.367	Sustainability Science and Policy: The Threat of Climate Change	3
Total Credits		3

METHODS COURSE

A methods course must cover methods of gathering and evaluating information in a development context. It should be selected in consultation with the minor advisor.

Code	Title	Credits
One course is required. Recommended courses include:		3
AS.230.202	Research Methods for the Social Sciences	
AS.270.205	Introduction to Geographic Information Systems and Geospatial Analysis	
AS.280.345	Public Health Biostatistics	
AS.280.350	Fundamentals of Epidemiology	
Total Credits		3

CONCENTRATION COURSE

The concentration courses should be selected in consultation with the minor advisor. They must be grouped around a specific theme, region, or within a specific discipline. Themes might include, for example, public health, environment, or economic development. Regions include Africa, Latin America, or Asia. Disciplinary concentrations might be in Anthropology, Economics, Geography, History, Political Science, Public Health, or Sociology.

Code	Title	Credits
Two courses at any level		6
Three courses at the 300-level or higher		9
Total Credits		15