

Proposal to Create a MIME Course Designator – Submitted by Kendra V. Sharp,
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Justification

The College of Engineering has recently launched a Humanitarian Engineering (HE) Program, and will soon be submitting a Cat II proposal for a Humanitarian Engineering undergraduate minor. We are starting to offer core courses for the HE minor, including ENGR499/599, Engineering Design in Emergency and Low-Resource Environments taught in Winter 2015. We are also working to teach other core courses for the intended minor starting in AY2015-2016. We would like to offer these as “HE” courses, thus we are submitting this proposal for an HE designator.

[Purpose: The proposed course designator should have an identified purpose within the curricular structure of Oregon State University.](#)

- [What academic programs, including majors, certificates, options and minors will be served by courses within the designator?](#)

The HE program serves undergraduate and graduate students across the College of Engineering and in engineering programs beyond CoE (e.g. Water Resources Engineering, Biological and Ecological Engineering, etc.). An HE designator will help identify these courses as related to the program, which assists with accountability and tracking. Once the undergraduate minor is in place, the majority of core courses will have HE designators. A consistent designator will also enhance connections among students, which we believe is important in terms of creating and supporting a cohort of HE students with common interests.

Over the longer term, we intend to also offer an academic certificate, option or minor at the graduate level and are in the second round of submission for a \$3M, 5-year graduate educational proposal to the National Science Foundation’s (NSF) NSF Research Traineeship (NRT) program in Humanitarian Engineering, Science and Technology. If it is funded, we will create a graduate certificate program accessible to many majors across campus.

- [In what ways do the general area and scope of the content constitute a coherent body of knowledge?](#)

The general area and scope is humanitarian engineering, which we define as the use of science and technology-based solutions to address basic human needs and improve quality of life for rural and/or underserved populations. The underlying theme is that of engineering with context, including social, cultural, economic, environmental, resource, gender, and even political. Thus we are bringing in multidisciplinary approaches to problem-solving and emphasize the importance of these other factors to engineering problem definition and solution methodological approaches.

- [Is the proposed usage of the designator consistent with practice at OSU and other institutions? Give examples.](#)

Humanitarian Engineering, by definition, involves multidisciplinary approaches to problem-solving. As such, the few but growing number of these programs often uses “generic” designators such as:

- Engineering (ENGR) or Engineering Design (EDSGN) at Penn State
- Liberal Arts and International Studies (LAIS) at Colorado School of Mines

Or, if the program resides in a particular “school/department,” a designator for that department is used such as:

- The Engineering for Developing Communities program at UC-Boulder uses Civil, Environmental and Architectural Engineering (CVEN) as a designator plus they incorporate other courses from the Sustainability program (SUST) and the Alliance for

Technology, Learning and Society (ATLS) program.

Virtually all of these programs are relatively new and/or structured in non-traditional and interdisciplinary program, so they may also be in the process of creating a unified identifier. We believe that having a unified identifier at OSU would be a strength both for the program in terms of creating an identity and for the students who will have a body of HE designators on their transcripts.

Accountability: Responsibility for the integrity and oversight of the proposed course designator should be clearly identified

• What is the academic College of the designator?

The HE program resides in the College of Engineering, with a lead faculty member in the College of Engineering. Thus, the HE designator will also be in the College of Engineering.

• Who is responsible for administering courses in the designator, e.g. scheduling and catalog updates. Who are the faculty contact persons?

The HE program leadership and scheduler in the School with whom the HE program lead faculty is associated with will be responsible for administering courses. These are currently Kendra Sharp, lead faculty for HE, and MIME Scheduler, Prof. Ken Funk. These will also be the faculty contacts regarding the designator.

• Who is responsible for consistency and outcome assessment for courses in the designator?

The HE Program leadership (currently Prof. K. Sharp) will be responsible for consistency and outcome assessment for courses in the designator.

• Which units get credit for the SCH generated by courses in the subject code?

Because the courses will be primarily taught by faculty across the College of Engineering, the College of Engineering will get SCH generated by courses in the subject code. If and when the HE program is able to receive SCH directly, this would switch over to the HE program which resides at the CoE level.

• Who is responsible for communicating information about the new designator to stakeholders, including advisors, Admissions, and students?

The HE program leadership and the advising at the College of Engineering level will be responsible for communicating information about the new designator to stakeholders, including advisors, Admissions, and students.

Impacts: Who will benefit from the new designator and what changes will result from its implementation?

• Will courses in the new designator duplicate or compete with existing ones?

These courses do not duplicate or compete with existing ones. We have vetted the curricular plan for the undergraduate minor with the HE faculty leadership committee, with membership across the College of Engineering and beyond. (50% of the faculty leadership committee is outside of CoE).

• Are there expected cross-listings or curricular equivalencies?

There may be cross-listings with the College of Liberal Arts as the new Global Development Studies minor is created, which is expected to happen over Summer 2015 under the leadership of Prof. Bryan Tilt in the School of Language, Culture and Society (in CLA).

• How will the new designator affect transfer credits?

The new designator will not affect transfer credits.

• Will any previous existing designators expire as the new one appears?

No designators will expire as the new one appears.

• How will the new designator benefit students?

This new designator will be extraordinarily beneficial to students. Our goal is for them to identify the designator with the HE program. Additionally it will allow us to create courses that will help students understand the commonalities and differences across and beyond the College of Engineering with respect to HE-related activities on campus. It will also help in promoting the

minor to prospective students. We note that there is research (and extensive anecdotal data) showing that women in particular are more attracted to engineering fields that have closer connections to societal impact. HE is one of those. In the OSU mechanical engineering graduate applicants for Fall 2015, 40% of the female applicants checked a box indicating interest in humanitarian engineering and only 12% of the male applicants checked the same box. So creating the program (and the identifier) is consistent with the university and College's commitment to diversity. It is also consistent with the aspects of university's SP3.0 that emphasize interdisciplinary efforts, internationalization, and service to the local and global community, all priorities within the HE minor curriculum.