Western Carolina University
College of Engineering and Technology
School of Engineering + Technology

Undergraduate
ENGR 365 – Global Engineering and Technology

Course Syllabus
3 Credits

Contact Hours: Formal: at least 15 hours (several meetings with instructors and/or professionals, several tours of factories, frequent instructor-led discussions)

Informal: at least 30 hours (reading, visits, journaling, reports, etc.)

Required for major/minor: No. It counts as P6 World Culture for all students. ULP for students in other majors. It may be also counted as technical elective for some SET programs, upon approval.

Prerequisites: None. No requirement on language (all meetings are in English).

Corequisites: None.

Course Description: Fundamental skills and cultural responsiveness in engineering and technology on a multidisciplinary team in a global context. Focus is given to effective communication (across different cultures and either synchronous or asynchronous), clear understanding of engineering standards, knowledge of project development process, commitment to ethics, professionalism, interdisciplinary team-work and equality, and appreciation for global interconnectedness of various practices.

Liberal Studies Program Learning Objectives:

This course satisfies the **P6** (World Cultures) Perspective requirement of the Liberal Studies program.

In this course, the following Student Learning Outcome for the Liberal Studies program is emphasized. Students are expected to design a learning contract that reflects their individual learning interest at the start of the course to obtain the learning objectives.

Objective: Awareness of Impact
Outcome #8: Students will evaluate the impact of their own and others' actions on the human and/or natural worlds.

Course Objectives: The objectives of this course are aligned with the objectives of the Liberal Studies Program, as shown below. The students will be able to

I. Gain factual knowledge about global engineering and technology practices. Collect, interpret and use information related to engineering and technology practices within local, national, and international contexts. Apprehend the impact of engineering and technology solutions in a global, economic, environmental, societal and global context.

II. Reflect upon the principles, generalizations and theories of global engineering and technology practices beyond United States. Articulate the importance of cultural disparities and similarities when developing engineering practices. Understand and is committed to address professional and ethical responsibilities including a respect for diversity.

III. Critically examine complex issues of a global nature in contemporary engineering and technology practices. Recognize contemporary issues. Understand the nature and importance of interrelationships and interdependence between and among individuals, countries, and regions.

IV. Contribute as a member of a multidisciplinary team to create a project schedule and plan. Function on multidisciplinary teams effectively as a member or leader. Organize and participate in effective team meetings. Develop and document the solution to engineering design challenges as part of a team. Propose clearly-defined metrics to evaluate the performance of a solution.

V. Communicate in an engineering environment through technical writing, verbal communication, and delivery of presentation. Develop organizational and communication skills that facilitate active involvement in, and contributions to projects in a wide variety of disciplines. Apply written, oral, and graphical communication in both technical and non-technical environments effectively; and identify and use appropriate technical literature.

Recommended Reading: Articles regarding Bulgaria's transition in its economic and engineering development, as well as engineering during the pandemic, will be shared in the course LMS (Learning Management System).

References:

W. J. King and James G. Skakoon (2001). *Unwritten Laws of Engineering: Revised and Updated Edition*, American Society of Mechanical Engineers. ISBN: 978-0791801628

Don Norman (2013), *The Design of Everyday Things: Revised and Expanded Edition*. Basic Books. ISBN: 978-0465050659.

David Beer and David McMurrey (2009). *A Guide to Writing as an Engineer*, 3rd Edition. John Wiley and Sons. ISBN: 978-0470417010

Other papers as handouts, and the links of public videos on relevant topics to start class discussions (such as stereotypes of engineers, gender differences, and cultural influences), will be provided on LMS.

Instructional Approach: Course material will be introduced during meetings. Reading assignments and exercise problems will be assigned to reinforce material that is covered in this course. Quizzes are given to ensure that students are maintaining pace with the assigned reading. Time will be allocated for exercise review. All course materials (syllabus, exercises, and handout) will be posted to LMS. In addition to lectures, exercises and quizzes, students will conduct group meetings and create project descriptions and designs.

Classroom Policies: The following policies will be in effect during class meetings:

- Cell phones must be turned off during class time and tests.

- Drinks, food and tobacco are not permitted in classrooms.

Course Format: During summer term, this course is a travel course with an online component (in support of 2020 Initiative 1.3.3). The course description and learning objectives are the same, but learning materials, assignments, and assessment devices are tailored to each specific format.

Physical fitness requirement: There will be considerable walking required during the trip, often at a brisk pace (e.g., through airports & train stations, from appointment to appointment, etc.). It is reasonable to expect a few miles of total walking per day, though when spread out over the day is not unusual for most college students. Students will also be expected to take staircases in several venues, barring a physical impediment that would require alternative plans. You also must be able to move your luggage on your own without any carts or other aids. This includes bringing the luggage up/down stairs, loading it on/off vehicles, and navigating city streets with bags. Your instructor can offer some guidance about how to best pack to minimize the amount you need to transport.

Attendance: Students are required to attend all lectures and their own group meetings. In a travel course, the attendance is mandatory and monitored at all times for both course delivery and student safety. A missed quiz cannot be made up without informing the instructor in advance. Regardless of whether a student attends class, it is their responsibility to obtain any material from fellow classmates.

Assigned Work: Timely and full completion of reading assignments and reports is vital to student success in this course. The following policies will be in effect:

- Students are expected to do the suggested exercises after reading assignments, and the quizzes will be in similar format as the exercises.
- Any late reports will receive an automatic 30-point grade reduction.
- Any work which is not submitted prior to the next regular semester test will not be accepted. Work assigned after the last regular semester test will not be accepted after the last regular class meeting of the semester.
- No makeup tests or quizzes will be given unless the instructor is notified prior to the absence and/or corroborating documentation of the reason for the absence is provided.

Reports: Reports will be required on various subjects. Reports must be written according to guidelines provided by the instructor. In order that reports demonstrate your best efforts, students are encouraged and may be required to meet with a writing tutor or a Writing Fellow (if available) at the Writing and Learning Commons before a final draft is turned in. Writing Fellows are trained undergraduate writing tutors who want to help you to improve your writing skills. The instructor may require a verification sheet signed by the Writing Fellow / tutor to confirm the meeting must be attached to the final draft.

Course Schedule in Travel: The temporary itinerary will be provided at the course website https://yan.wcu.edu/engr365_2024_plan/. The actual activities will be altered based on destinations, logistics, and as best meets the needs of the class members.

Evaluation: Each student will be evaluated based on performance in the following areas. Respective weights of each performance area are as noted. If any expected unit

of this course or assignment cannot be fulfilled, the grading weight will shift to other activity units and assignments.

- Pre-trip meetings 10%
- Groundwork assignments 10%
- Trip engagement and composure 40%
- Reflection paper 20%
- Post-trip assignments 20%

Grading Scale: The grading scale below will be used to determine final grades.

Numerical Course Average	Grade Assigned	Quality Points per Semester Hour
98 - 100	A+	4.0
92 – 98	A	4.0
90 – 91	A-	3.67
88 – 89	B+	3.33
82 - 87	B	3.0
80 – 81	B-	2.67
78 – 79	C+	2.33
72 - 77	C	2.0
70 – 71	C-	1.67
68 – 69	D+	1.33
62 – 67	D	1.0
60 - 61	D-	0.67
0 - 59	F	0

Click the Following Link to Review
Required Links to Institutional Policies, Required Syllabus Statements for Online Proctoring and Originality/Plagiarism Guidance and Other Student Supports