Course Instructor
Name: Seetha V. Veeraghanta, Ph.D.
Pronouns: She/Her/Hers
Office Location: 158 Sill Center
Phone Number: 801-585-0612
Email: s_veeraghanta@utah.edu

Offices hours: MWF, Noon-1pm and by appointment and are in my office location.

Library Instructor
Adriana Parker
adriana.parker@utah.edu
801-585-9245

Student Success Advocate
Lisa Lewis
lisa.lewis@utah.edu
385-227-2309

Peer Advisors

<table>
<thead>
<tr>
<th>Peer Advisors</th>
<th>Section</th>
<th>Day/Time</th>
<th>Class Room</th>
<th>Phone</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rebecca Ray</td>
<td>9</td>
<td>MWF 8:35-9:25</td>
<td>WEB L114</td>
<td>385.216.3326</td>
<td><a href="mailto:rebeccaguernsey@yahoo.com">rebeccaguernsey@yahoo.com</a></td>
</tr>
<tr>
<td>Sam Kight</td>
<td>2</td>
<td>MWF 9:40-10:30</td>
<td>WEB L114</td>
<td>801.631.9301</td>
<td><a href="mailto:samanthakight17@gmail.com">samanthakight17@gmail.com</a></td>
</tr>
<tr>
<td>Hibban Butt</td>
<td>3</td>
<td>MWF 10:45-11:35</td>
<td>WEB L114</td>
<td>385.223.9391</td>
<td><a href="mailto:hibbanbutt@gmail.com">hibbanbutt@gmail.com</a></td>
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</tbody>
</table>

Required Materials
Please note that this list is subject to change with notice. If I find a relevant or a useful article/reading, I reserve the right to include that reading as part of your required reading during the semester with notice. All readings will be made available as pdf documents on Canvas.

There is no one required text for the class. All the readings are available online on Canvas as pdf documents. Links to video recordings are available on Canvas as well; you are required to login using your UNID and password. You will be required to watch the video during class time, unless otherwise advised.
Audiovisual Materials Used in Class


Whatever reading is listed for a particular day should be done BEFORE you come to class on that day.

Course Description: Engineering-LEAP [E-LEAP]

This course provides the student with an understanding of the role of ethics in the engineering profession by focusing on specific issues set out by the Accreditation Board for Engineering and Technology (ABET). Students engage in a discussion of community by examining how the world of social science studies human institutions, cultures, and behaviors. Students then apply the concepts learned to engineering ethics and decision-making processes in national and global communities.

“Social and Ethical Implications of Engineering,” LEAP 1501, provides you with an understanding of the role of ethics in the engineering profession by focusing on specific issues set out by the Accreditation Board for Engineering and Technology [ABET]: adhering to “an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts, an ability to communicate effectively with a range of audiences” and “an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.” (Criteria for Accrediting Engineering Programs 2019-2020.) In addition, this course fulfils *Social and Behavioral Science Foundation (BF)* as well. There are no prerequisite course requirements needed to complete this course.

Course Outcomes LEAP 1501

*Essential Learning Objectives addressed by this course (these have been adopted by the Utah State Board of Regents as important objectives to be fulfilled by general education classes):*

Acquiring intellectual and practical skills including:

1. **Critical and creative thinking:** Critical thinking is a habit of mind characterized by the comprehensive exploration of issues, ideas, artifacts, and events before accepting or formulating an opinion or conclusion. Creative thinking is both the capacity to combine or synthesize existing ideas, images, or expertise in original ways and the experience of thinking, reacting, and working in an imaginative way characterized by a high degree of innovation, divergent thinking, and risk taking.

2. **Information literacy:** The ability to know when there is a need for information, to be able to identify, locate, evaluate, and effectively and responsibly use and share that
information for the problem at hand. - The National Forum on Information Literacy

3. **Teamwork and problem solving:** Teamwork is behaviors under the control of individual team members (effort they put into team tasks, their manner of interacting with others on team, and the quantity and quality of contributions they make to team discussions.) Problem solving is the process of designing, evaluating, and implementing a strategy to answer an open-ended question or achieve a desired goal.

At the end of the semester, you should be able to

1. Assess the social and ethical implications of creation and constructions of technology and its uses in the United States, in other nations, and in a global setting by using social science methods of inquiry
2. Acquaint yourself with the LEAP learning community, one in which students know each other, the E-LEAP faculty members, peer mentors, and the College of Engineering faculty
3. Acquire a more sophisticated knowledge of library technologies
   a. By being introduced to databases in the social sciences, applied sciences and engineering
   b. By being introduced to research methodologies specific to their discipline
   c. By learning how to evaluate internet sources
4. Develop sophisticated writing and oral communication strategies which allow the student to:
   a. Demonstrate critical thinking skills in crafting written and oral assignments
   b. Analyze professional communication skills
   c. Assess levels of technical expertise in audiences
   d. Use quantitative information in visual aids such as graphs and charts
   e. Integrate library resources into a final, team-based research project
5. Learn team building skills
   a. By practicing leadership skills in teams
   b. By negotiating task assignments
   c. By evaluating the outcomes of team projects
6. Explore a variety of campus activities and organizations in order to become part of the larger University community

**Teaching and Learning Methods**

LEAP 1501, Social and Ethical Implications of Engineering, prepares you to critically understand and appreciate the implications of engineering and technology within the broader context of local and global societies and communities. It is through the help of critical readings/articles/essays and case studies that you will learn to identify these impacts. You will identify and understand professional and ethical responsibilities based on codes of ethics statements from discipline specific professional organizations and societies. You will study a few cases of engineering failures in order to integrate concepts of risk analysis into your discussion of ethics and professional responsibilities, especially as these failures relate to public health, safety, and whistle blowing. Central to the discussions of ethics and professionalism, are the *Fourteen Grand Challenges for Engineering in 21st*
Century\textsuperscript{1}, articulated by National Academy of Engineering. This course offers you an opportunity to understand the import of these fourteen challenges within the purview of social, ethical and policy discourses of technological advances and uses in the local and global settings.

In order to understand the role of the engineer in local, national, and global settings, you will begin by asking:

- What is a society or community? How do engineers define a professional society? What is the purpose of professional engineering societies?
- How can engineers determine what is ethical while making decisions within different communities? Are traditional philosophical concepts about ethics applicable to engineering codes of ethics, or are there other ways to think about engineering ethics?
- What are some of the major questions and problems about communities studied by social scientists? What can engineers learn from social scientists and implement in dealing with other engineers, with corporations or government agencies, and with the public?
- How do social scientists study human behavior and institutions? What should engineers know about social and organizational theory?
- What role do social scientists play in our society in influencing public debate and public policy? How does this relate to the role of engineers as citizens and as technical advisors in shaping progress or changes in technology?
- How do social scientists and engineers analyze and respond to issues of globalization?

To understand the impact of engineering solutions in global and societal contexts, you will study concepts of local and global sustainability. You will examine the notion of \textit{sustainable development} and more specifically how this perspective influences our use and development of renewals from the practicing engineer’s perspective. In addition, you will also critically inquire ethical implications of issues such as globalization and rapid growth of information technology, especially within the context of grand challenges. You will explore your discipline specific discourse on sustainability and ultimately present your findings as a culmination of your semester-long learning. You will receive detailed instruction and guidance on how to present professionally.

LEAP 1501 is a predominantly discussion based class with lectures interspersed to guide the class discussion. To enable these conversations and discussions, readings are assigned for each class, which will focus the trajectory of your learning. Reading assignments will average about 20-50 pages for many class periods. Because we have so much material to discuss in any given class period, and class will consist largely of discussion rather than lecture, you must come prepared by having done the reading in a thoughtful, responsive manner. Read the texts with critical skepticism, i.e., to identify the main ideas presented, to weigh and evaluate these ideas with an open mind, and to be prepared to share your responses about what you have read.

\textsuperscript{1} http://www.engineeringchallenges.org/challenges.aspx
I believe that learning is closely related to taking risks in the classroom, risks that I take as your instructor and risks that you take as students. General Education, for me, is an exploration, an intellectual and emotional process. Exploration demands freedom, freedom from making mistakes without fear of recriminations and retributions. If General Education is exploration, and exploration demands freedom, then risk taking is an integral part of this process. Risks can be taken only when there is a safe space and I, as your instructor, will strive to make my classroom a safe space for you to learn.

**Success in class**
If you make a serious commitment to doing five things, you can succeed in this class.

1. You cannot fulfill the requirements for the class unless you attend regularly.
2. Be on time. Excessive tardiness is bad etiquette in a university class.
3. Come to class ready to participate. *I am not a TV and you are not a sponge.* A class such as this depends on your contribution to discussion. You cannot contribute without doing the reading on schedule or before.
4. Be willing to ask questions when necessary. There is no such thing as a “dumb question”.
5. Refer to the syllabus, often you will find that the answer/information you seek is already answered in the syllabus. *The syllabus is your friend.*

The above paragraph means that you are an active participant in class. For me, that precludes your multitasking. Online games, shopping, Facebook, Twitter are not appropriate activities during a college class.

**University Policies Guidelines and Resources**

1. **Wellness Statement:** Central to this course is a broad concept of health and wellness. I believe that your personal health and wellness are essential to your success as a student. Personal concerns such as stress, anxiety, relationship difficulties, depression, cross-cultural differences, etc., can interfere with a student’s ability to succeed and thrive in this course and at the University of Utah. Please speak with the instructors before issues become problems. And, for helpful resources, contact the course-assigned SSA or the Center for Student Wellness at www.wellness.utah.edu or 801-581-7776.

2. **The Americans with Disabilities Act.** The University of Utah seeks to provide equal access to its programs, services, and activities for people with disabilities. If you will need accommodations for this class, reasonable prior notice needs to be given to the Center for Disability Services, 162 Olpin Union Building, (801) 581-5020. CDS will work with you and the instructor to make arrangements for accommodations. All written information in this course can be made available alternate format with prior notification to the Center for Disability Services.

2. **Addressing Sexual Misconduct.** Title IX makes it clear that violence and harassment based on sex and gender (which includes sexual orientation and gender identity/expression) is a Civil Rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such
as race, national origin, color, religion, age, status as a person with a disability, veteran’s status or genetic information. If you or someone you know has been harassed or assaulted, you are encouraged to report it to the Title IX Coordinator in the Office of Equal Opportunity and Affirmative Action, 135 Park Building, 801-581-8365, or the Office of the Dean of Students, 270 Union Building, 801-581-7066. For support and confidential consultation, contact the Center for Student Wellness, 426 SSB, 801-581-7776. To report to the police, contact the Department of Public Safety, 801-585-2677(COPS).

3. Plagiarism. “Academic misconduct” includes, but is not limited to, cheating, misrepresenting one’s work, inappropriately collaborating, plagiarism, and fabrication or falsification of information, as defined further below. It also includes facilitating academic misconduct by intentionally helping or attempting to help another to commit an act of academic misconduct.
   • “Cheating” involves the unauthorized possession or use of information, materials, notes, study aids, or other devices in any academic exercise, or the unauthorized communication with another person during such an exercise. Common examples of cheating include, but are not limited to, copying from another student’s examination, submitting work for an in-class exam that has been prepared in advance, violating rules governing the administration of exams, having another person take an exam, altering one’s work after the work has been returned and before resubmitting it, or violating any rules relating to academic conduct of a course or program.
   • Misrepresenting one’s work includes, but is not limited to, representing material prepared by another as one’s own work, or submitting the same work in more than one course without prior permission of both faculty members.
   • “Plagiarism” means the intentional unacknowledged use or incorporation of any other person’s work in, or as a basis for, one’s own work offered for academic consideration or credit or for public presentation. Plagiarism includes, but is not limited to, representing as one’s own, without attribution, any other individual’s words, phrasing, ideas, sequence of ideas, information or any other mode or content of expression.
   • “Fabrication” or “falsification” includes reporting experiments or measurements or statistical analyses never performed; manipulating or altering data or other manifestations of research to achieve a desired result; falsifying or misrepresenting background information, credentials or other academically relevant information; or selective reporting, including the deliberate suppression of conflicting or unwanted data. It does not include honest error or honest differences in interpretations or judgments of data and/or results.

4. University Safety Statement. The University of Utah values the safety of all campus community members. To report suspicious activity or to request a courtesy escort, call campus police at 801-585-COPS (801-585-2677). You will receive important emergency alerts and safety messages regarding campus safety via text message. For more information regarding safety and to view available training resources, including helpful videos, visit safeu.utah.edu.
5. **LGBT Resource Center.** The U of Utah has an LGBT Resource Center on campus. They are located in Room 409 in the Oplin Union Building. Hours: M-F 8-5pm. You can visit their website to find more information about the support they can offer, a list of events through the center and links to additional resources: http://lgbt.utah.edu/. Please also let us know if there is any additional support you need in this class.

6. **Learners of English as an Additional/Second Language.** If you are an English language learner, please be aware of several resources on campus that will support you with your language and writing development. These resources include: The Writing Center (http://writingcenter.utah.edu/); the Writing Program (http://writing-program.utah.edu/); the English Language Institute (http://continue.utah.edu/eli/). Please let us know if there is any additional support you would like to discuss for this class.

7. **Undocumented Student Support.** Immigration is a complex phenomenon with broad impact—those who are directly affected by it, as well as those who are indirectly affected by their relationships with family members, friends, and loved ones. If your immigration status presents obstacles to engaging in specific activities or fulfilling specific course criteria, confidential arrangements may be requested from the Dream Center. Arrangements with the Dream Center will not jeopardize your student status, your financial aid, or any other part of your residence. The Dream Center offers a wide range of resources to support undocumented students (with and without DACA) as well as students from mixed-status families. To learn more, please contact the Dream Center at 801.213.3697 or visit dream.utah.edu (Links to an external site.).

8. **Women's Resource Center.** The Women’s Resource Center serves as the central resource for educational and support services for women. Honoring the complexities of women’s identities, the center facilitates choices and changes through programs, counseling, and training grounded in a commitment to advance social justice and equality. https://womenscenter.utah.edu/ (Links to an external site.)

9. **Inclusivity Statement.** It is my intent that students from diverse backgrounds and perspectives be well served by this course, that students’ learning needs be addressed, and that the diversity that students bring to this class be viewed as a resource, strength, and benefit. Your suggestions are encouraged and appreciated.

**Additional resources**

- **Student Code.** Link to the detailed student code - http://regulations.utah.edu/academics/6-400.php
- **Accommodation Policy.** A comprehensive and detailed write up on accommodation policy is here - https://regulations.utah.edu/human-resources/5-117.php
- **Academic Tutoring.** Did you know you can get free online tutoring? Check it out here: https://online.utah.edu/current-student-resources/etutoring/.
Classroom Policies

1. Contacting the instructor
My office hours and office location are listed on the first page of this syllabus. Just come to see me to make an appointment if my office hours are not convenient. I look forward to meeting with you if you have any questions or just want to come by to share some additional ideas about the text or the discussions. A conversation is all that is often needed to solve many a problem.

2. Attendance Policies
I expect regular, full-time, on time class attendance and participation. Note that attendance is mandatory on days:

- You have library instruction
- You work in teams in class
- In addition, any other days that I may deem fit. You will be informed ahead of time before a class period is scheduled as mandatory.
- Note that the dates of team presentations will be drawn on Nov 12th. If you miss your team’s presentation you will forfeit (read relinquish) 50 points towards your presentation and report. Traveling on these days is not encouraged.

Mandatory attendance days are indicated on the course schedule. Missing these classes would entail a loss in a letter grade on the corresponding assignment and repeated absences will result in your loss of a team membership and thereby final presentation as well. On the flip side, you earn credit (10 points) for attending all mandatory attendance days.

Absence due to illness will be excused only WITH A DOCTOR’S NOTE. You can find all mandatory attendance days listed on the course schedule. If you miss more than one team meeting in class, you will be at the risk of being removed from your team and will not be provided with an alternate assignment. This would amount to failing the class as team assignments account for more than 50% of your course grade. Attendance during team meetings in-class are mandatory.

3. Assignments² and Grades

<table>
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<tr>
<th>Assignment</th>
<th>Points</th>
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<tbody>
<tr>
<td>Short Assignments</td>
<td>95</td>
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<tr>
<td>Homework assignments</td>
<td>60</td>
</tr>
<tr>
<td>Library quizzes/Assignments</td>
<td>20</td>
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<tr>
<td>Mandatory attendance credit</td>
<td>15</td>
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<tr>
<td>Interview with an Engineer – Newsletter</td>
<td>10</td>
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<tr>
<td>Midterm Exam</td>
<td>30</td>
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<tr>
<td>Student conference presentation</td>
<td>145</td>
</tr>
<tr>
<td>Team Memo 1: Articulate research topic/Research proposal</td>
<td>10</td>
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² Assignments, their values and due dates are subject to change with notice.
Team Memo 2: Explain Science and Technology; Industry connection  20
Team Memo 3: Evaluate technology and explain sustainability connection  20
Team Memo 4: Explain Ethics and policy implication  10
Mandatory meeting with PA with Presentation  5
PowerPoint Presentations - Consultations with Instructor  10
Presentation evaluations  10
Team presentations [30 min. max.]  50
Individual Memo/Report  10

Total  280

Grades are assigned by points and percentages only.

<table>
<thead>
<tr>
<th>Percentages</th>
<th>Letter Grade</th>
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<tr>
<td>94% and above</td>
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<td>D-</td>
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<tr>
<td>Below 60%</td>
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4. Assignments

Late assignments will not be accepted; they cannot be made up.

- Team assignments are precisely that – team assignments. By definition, they demand that a team collectively invests effort and submits the assignment for a grade. **If you miss a team meeting in-class and/or a library class, you will lose one letter grade on that corresponding team assignment.** Absence due to illness will be excused only WITH A DOCTOR’S NOTE. You can find all mandatory attendance days listed on the course schedule. If you miss more than one team meeting in class, you will be at the risk of being removed from your team and will not be provided with an alternate assignment. This would amount to failing the class as team assignments account for more than 50% of your course grade. Attendance during team meetings in-class are mandatory.

- You must attend all five-library sessions and must contribute to your team research project to receive credit. Library sessions are designed to aid and assist you in successfully completing your team research project. **Attendance at library classes is mandatory, as are teamwork class sessions.** If you miss a library session,
you will be ineligible to make up the library quiz/assignment assigned for that class.

5. Paper Responses and other major assignments
   - Directions for major assignments (interview, papers, student conference, and final report) will be distributed in written form and available on Canvas after they are explained in class.
   - Please note: I do not accept late major assignments. Unless you make prior arrangements; an assignment left in my (E)mailbox is not on time, even if it is there on the assigned day.
   - Citation style used during fall semester is IEEE. You may find useful links on Canvas (module) to help you with this style.

6. Extra Credit Points
   You may earn up to five (5) extra credit points during the semester, if you attend/participate in the following:
   - No more than two engineering activity and
   - No more than three LEAP activities and/or
   - Meet your Student Success Advocate for a consultation and earn a point.

To receive the credit for the options listed above, please write a 250-word report on the activity – What, When, Where, Who, Why and So what – and submit your write-up on Canvas. The last date for submission to receive credit is December 6, 2019. Note that you are not required to provide a write up if you meet your Student Success Advocate (Lisa Lewis).

7. LEAP 1060: To receive credit for LEAP 1060, “Methods and Technologies for Library Research,” a 1-unit course you need to attend all ten-library instruction sessions during 2019-2020 academic year [5 during fall 2019 and 5 during spring 2020 semesters] and get a passing grade for all ten quizzes/assignments. You will be eligible for this credit if you continue with E-LEAP in the Spring-2020 semester. We will provide you with more information as we approach Spring-20 semester registration.

8. Canvas: Canvas is the where course content, grades, and communication will reside for this course.
   - Access Canvas through utah.instructure.com or through CIS.
   - For Canvas, Passwords, or any other computer-related technical support contact the Campus Help Desk (https://it.utah.edu/help) 801 581-4000
   - For Canvas related issues or bugs, contact the Teaching & Learning Technologies help desk 801-581-6112 ext 2 and classhelp@utah.edu

We will be using Canvas to promote discussion and learning. I will post this syllabus on Canvas, along with your grades, assignments and announcements. You are required to submit your assignments to Canvas by the due date/time. Please note that I will NOT be handing out paper copies of assignments. All assignments will be posted on Canvas and available electronically. In addition, you will maintain contact with your team for the final
project by posting to your team's discussion topic, and you can access your grades and get copies of the major assignments after they have been distributed in class. **Note that participation and use of Canvas is required for this course.** Log in on a regular basis to check for postings from the Peer Advisor and me.

*Canvas is a public space and is owned by the University of Utah. When you are posting responses there, please follow commonly accepted rules of decorum and courtesy as you would in the classroom while responding to questions and interacting with other students, the peer advisor and the instructor.*