
Tuesday, Thursday 8:15-9:30
3 credits
Fall 2018, Location: Bruininks 312

Instructors:
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Office hours are by appointment. See Canvas for scheduling information for Impact Studio hours. These studios provide an opportunity to meet with instructors and mentors.

Course Description:
Students will work in teams developing sustainable business solutions to address an environmental or social challenge in India, Nicaragua or Uganda. Teams may address a challenge related to water supply, energy availability, food/agriculture production, waste management, public health or a topic mutually agreed upon by the instructor and student teams. General challenge topics developed in conjunction with partners in the the three countries will be provided as starting points for teams. During the semester a product or service must be designed, and a sustainable business model must be created around it. However this course is about more than just the project. It introduces the students to economic development in developing countries. It is also about learning the process for creating interventions or solutions that address some aspect of a Grand Challenge.

Early in the semester students will provide a preference for challenge topic, location and possible teammates. Typical team size is 4-6 students. The instructional staff will make the final team assignments to assure team diversity of majors and other factors. The instructional team includes a country coordinator in India, Nicaragua and Uganda. The country coordinators will work with teams on the local country context for their topics, including gathering field data (e.g., interviews, conducting surveys). Through scheduled mentoring sessions, called Impact Studio, students will have access to a variety of UMN and external mentors. Strong involvement of all team members and communication with international resources, mentors and outside experts is critical to success in the course.
The course includes instruction on a set of skills and attributes necessary to teams addressing Grand Challenges. This is referred to as the Knowledge to Impact (KTI) curriculum. The KTI curriculum has been developed by a group of people who teach GCC courses and by the Acara program at the Institute on the Environment. It includes a set of skills (design thinking, theory of change, value proposition design, presentation literacy), personal attributes (like leadership, empathy, and intercultural competency) and knowledge required to implement solutions.

Teams are expected to use both primary and secondary research in solving the challenge. A primary focus of the course is up-front work to identify the "right" problem to solve and to develop empathy with the people impacted by the problem. While students clearly can’t travel to the country during class, using the country coordinator and other resources does allow the students to become very knowledgeable about their topic and it’s cultural context. Teams must then develop a product or service, and corresponding financially sustainable business model for delivery of the product or service. A sustainable business model means the venture delivering the product or service can do so by creating value for some person or entity willing to pay for that value. The business model could be either for-profit or non-profit, but in either case the same evaluation criteria would be used. The model should be built around the customer and beneficiary needs and wants, as they will need to pay for the product or service to achieve a scalable model. Stakeholder analysis is a major part of this analysis and understanding the difference between stakeholders. Presentations will be required on the preliminary and final solutions. Each team member is expected to participate in the preparation of the business plan and presentation. The final course deliverables will be a well-designed business plan and presentation before a panel of development professionals.

Students must be graduate students or undergraduate with a junior or above standing. Students can appeal to the instructors if they wish to take the course and don’t fit these requirements. There are no course prerequisites beyond those.

**Required Reading:**

*Poor Economics* by Abhijit Banerjee and Esther Duflo. This book will be read and discussed during the first few weeks of class. It is an important book to help understand poverty and human behavior as it relates to sustainable development.

*Value Proposition Design* by Alexander Osterwalder and Yves Pigneur. This book will be used as a reference throughout the course. It has become a widely used book in the entrepreneurship and business strategy ecosystem.


Other, shorter, readings will be assigned during the semester.

**Recommended Reading:**

A collection of relevant readings will also be made available at the beginning of the semester.
Instructional Model:

Throughout this document (and during the course), the terms solution and intervention will be used somewhat interchangeably. This reflects the fact that different disciplines use different words to describe similar aspects of the overall process covered in this class. Understanding some of those differences is part of the learning objectives for the class.

The course structure will be:
- In-class discussions and limited lecture time.
- Online lectures on primary concepts. These concepts are further discussed below in learning objectives.
- In-class workshops applying these concepts to student projects.
- In-class studio time. This is time for students to work on their projects with advice from the instructional team.
- Out-of-class work time. Students will be responsible for interviewing stakeholders, either directly or via the country coordinators, in their Grand Challenge topic.
- Coaching from instructional team and mentors. These will be during class or during fixed times in an extended office hour format (Impact Studio).

Most lecture time will be online resulting in a hybrid-flipped model. There will also be optional Impact Studio time that occurs outside regular class time. These sessions can be thought of as extended office hours and will be held multiple times a week at different locations, with the instructors and mentors available on a rotating basis. The schedule and signup for these are on Canvas. While it can be challenging to schedule a team to be at the Studio, it is a very important thing for students to try to schedule some, even with parts of the team.

Knowledge to Impact (KTI) Framework:

The KTI Framework (also called a curriculum interchangeably in this document) is a set of skills, personal attributes and knowledge common to interventions to Grand Challenges. KTI borrows heavily from many existing best practices from Design Thinking, Lean Startup, and Sustainable Development. Creating a venture that makes an impact on an existing problem is very entrepreneurial, that is where the Lean Startup tools come in. These problems also have many stakeholders and Design Thinking provides many tools to help with understanding the viewpoint of these stakeholders. Sustainable Development covers many areas but in KTI context primarily refers to a Theory of Change - namely what is your theory for how your intervention will create the long term impact you want. Along with all that, presentation literacy is a necessary skill to convey complex information. Along with all these skills there are certain attributes that are helpful to individuals striving to lead change. These include intercultural competency, working on a team, empathy, resilience, working with coaches and mentors, plus several others. This course is really an introduction to the KTI Framework, there are other classes that take a deeper dive into aspects of it.

Learning Objectives:

The course has several overall learning objectives:
● Students will gain a basic understanding of sustainable development and the context for it in their country of study (India, Nicaragua or Uganda).
● Students will understand and apply the Knowledge to Impact (KTI) framework to a selected Grand Challenge topic.
● Students will create a plausible design and implementation plan for the solution or intervention that addresses their Grand Challenge problem statement.

The latter two objectives require many secondary learning objectives.
● Students will synthesize knowledge from multiple sources.
● Students will develop a basic understanding of the concept of system thinking and stakeholders.
● Students will construct a logic model and theory of change for their project.
● Students will develop a basic understanding of the design thinking process and apply it to their project.
● Students will understand the concept of a value proposition and subsequently construct a value proposition for their problem.
● Students will understand different paths to implementation and apply the appropriate path to their proposed intervention or solution.
● Students will discuss and identify key leadership traits as they apply to their project.
● Students will defend in oral and written communications the various stages of their design and development of their problem statement, theory of change and solution.
● Students will understand cultural and societal implications of their proposed intervention.
● Students will work effectively in a team and with mentors.
● Students will create and deliver effective oral presentations.
● Students will demonstrate intercultural competency (including within their team).

Impact Studio:
This course requires students to both understand a complex societal challenge, and to begin working on viable solutions to resolve the challenge. The Impact Studio provides a creative co-working space for teams to develop solutions to their grand challenge, supported by coaches that include both instructors and professionals from outside the University. These are not required sessions, but allow students from this course to receive extra mentoring, as well as interactions with students across the GCC courses.

Signup information is on the course Canvas.

Credits and Workload Expectations:
1 credit is defined as equivalent to an average of 3 hours of learning effort per week (over a full semester) necessary for an average student to achieve an average grade in the course. A student taking a 3-credit course should expect to spend at least 9 hours of effort per week. This amount is the minimum effort expected in this course. Thus, a total effort of about 130 to 150 effort hours per students is expected during the semester (to achieve an average grade). You will spend more time as you develop your solutions and business plans. Time must also be spent communicating with your mentors and country partners.
The effort and learning objectives defined in this syllabus are for both the 3005 and 5005 course. Instructors will work with students enrolled in the 5005 course on an individual basis to determine extra work required.

**Liberal Education and Global Perspectives Requirements**

This class is consistent with the University of Minnesota’s Liberal Education (LE) requirement and Global Perspectives (GP) requirement.

The Association of American Colleges and Universities defines liberal education as that which “empowers individuals with broad knowledge and transferable skills, and a strong sense of value, ethics, and civic engagement”, and is “characterized by challenging encounters with important issues” (AACU, “Liberal Education Resources”, link). That definition reflects the goals of the course. Students in the course grapple with Grand Challenge problems facing communities in India. Doing so highlights several aspects regarding the ethics of action (or inaction). Students work together in teams to identify feasible solutions and to put together a plan that would allow someone to implement that solution. That process requires broad knowledge of developing-country issues and broadly transferable skills, including problem solving, working on diverse teams, and a combination of brainstorming with empathy for others.

The Global Perspectives requirement is that students have “at least one significant academic exposure to the world beyond U.S. borders, and the opportunity to consider the implications of this knowledge for the international community and their own lives.” Consistent with that requirement, this class focuses on how, in the Indian context, individuals and small teams can make a difference on Grand Challenge problems.

Students discuss and reflect on the implications of issues raised by the course material for the international community, India, and for their own lives. In their research and written reports, students explore the local and national contexts for the problems they study and the lessons learned from prior national and international efforts to address those problems. Students evaluate implications for their own lives by considering whether, after the course ends, they would implement the solutions they propose.

**Grading:**

The University of Minnesota’s Uniform Grading Policy is:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
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<tbody>
<tr>
<td>A</td>
<td>Achievement that is <strong>outstanding</strong> relative to the level necessary to meet course requirements.</td>
</tr>
<tr>
<td>B</td>
<td>Achievement that is <strong>significantly above</strong> the level necessary to meet course requirements.</td>
</tr>
<tr>
<td>C</td>
<td>Achievement that <strong>meets</strong> the course requirements in every respect.</td>
</tr>
<tr>
<td>D</td>
<td>Achievement that is <strong>worthy of credit</strong>, even though it fails to meet fully the course requirements.</td>
</tr>
<tr>
<td>F</td>
<td>Represents failure and signifies that the work was either: 1) completed but at a level <strong>not worthy of credit</strong>, or 2) <strong>not completed</strong> and there was no agreement between the student and instructors that the student would be awarded an incomplete.</td>
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The course will be graded per the following table. 40% of the grade is based on individual effort and 60% of the grade is on the team-based project.

<table>
<thead>
<tr>
<th>Individual - based</th>
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<tbody>
<tr>
<td>Teammate evaluation</td>
<td>10%</td>
</tr>
<tr>
<td>Assignments</td>
<td>20%</td>
</tr>
<tr>
<td>Participation*</td>
<td>10%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100%</td>
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<table>
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<tr>
<th>Team - based</th>
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</thead>
<tbody>
<tr>
<td>Team-based assignments</td>
<td>10%</td>
</tr>
<tr>
<td>Plan content (written and presentation)</td>
<td>40%</td>
</tr>
<tr>
<td>Quality of Delivery</td>
<td>10%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100%</td>
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* Class attendance is required.
  - One miss is allowed per semester, after that a .5 point deduction per missed class from overall grade.
  - Excuse request received 24 hours before class starts (except if ill, then email before class).
  - Be reasonable in requests, being too busy or tired is not an acceptable request.
  - Having a job interview, conference, or some immovable event is accepted.
  - Being late to class is frowned upon and during the first class period an appropriate non-grade related penalty for being late will be discussed.

Assignments are due at the beginning of class the day they are due (unless otherwise noted). Late assignments are not accepted. Assignments are graded as follows:

<table>
<thead>
<tr>
<th>Graded on a 2 point scale</th>
<th>Points</th>
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</thead>
<tbody>
<tr>
<td>On time and satisfactory</td>
<td>2</td>
</tr>
<tr>
<td>Unsatisfactory</td>
<td>1</td>
</tr>
<tr>
<td>Late or not done</td>
<td>0</td>
</tr>
</tbody>
</table>

  - Any assignment that receives a 1 should have a comment on why. That assignment can't be redone for more credit.
  - At end of semester, allowed to throw out lowest grade.
  - The instructors will strive to make sure every assignments has learning objectives and summary of why it is being assigned.
  - Many lectures will be on Voicethread on Canvas. Watching these videos will be graded as an assignment.
  - Rules same for individual and team based assignments.
Final Report:
The final report is a significant effort, and includes a written and an oral portion. The written portion is up to 10 pages, including figures and tables. Appendices outside of the 10 pages are allowed. The report needs to be concise yet provide sufficient detail so that the solution can be demonstrated. The report will be reviewed by instructors and by professionals from outside the University, and will need to make a strong case for the proposed solution.

Technical competence, numerical accuracy, documentation, neatness, organization, timeliness and clarity of presentation will be considered in evaluating students’ work.

The oral presentation requires a concise, persuasive pitch to audience members from inside and outside the University.

A detailed rubric for the project and presentation will be available on Canvas.

The oral and written reports must answer, concisely and persuasively, these questions:
1. What problem are you addressing? Why is it important? Why are you passionate about solving it?
2. Why do you think it is a problem, and what evidence do you have? A “problem” is not one to the student, but to the customer or group you wish to engage.
3. What is your solution, and how does it work? What gap or opportunity have you realized? What is the value proposition?
4. What is your theory of change?
5. Why do you think your solution will work / what evidence do you have? Why hasn’t someone else done it already? Who are your customers and key partners?
6. How will your solution be sustainable and scalable? What is your financial model?

Key Course Dates:
This class meets Tuesday & Thursdays, 8:15-9:30am. Key dates during the semester:
Sept 5, 2017, 8:15-9:30am – First Day of Class: Course introduction
Sept 18, 2017, 8:00am – Challenge Topic preference due.
Oct 4, 2017, 5pm-8pm – Acara Open House (IonE)
Oct. 24, 2017, 8:15-9:30am -- Problem Statement Presentations
Oct 31, 2017, 8:15-9:30am – Mid-term presentations
Nov 28, 2017, 5:00 - 7:00 (exact time TBD), Grand Challenge Course Community workshop.
December 9, 2016, 5pm – Final business plan, grant fund, online business models due
December TBD – Final presentations time decided by class.

University Policies
Persons with disabilities that require accommodations will be assisted on an individual basis. Contact Disability Services (626-1333) and the instructor in advance to arrange accommodations.

Cheating is not allowed in the course and will not be tolerated. Anyone found cheating will immediately receive a grade of zero on that assignment. If such behavior occurs more than once, the student will receive a grade of F in the class.
Harassment and disruptive and disturbing behavior will not be tolerated; students will be asked to leave immediately if such behavior occurs, as defined in the Student Conduct Code.

Grading: http://policy.umn.edu/Policies/Education/Education/GRADINGTRANSCRIPTS.html

Student conduct code: http://regents.umn.edu/sites/default/files/policies/Student_Conduct_Code.pdf

Makeup work: http://policy.umn.edu/Policies/Education/Education/MAKEUPWORK.html

Student responsibilities: http://policy.umn.edu/Policies/Education/Education/STUDENTRESP.html


Equity, diversity, equal opportunity and affirmative action:
http://regents.umn.edu/sites/default/files/policies/Equity_Diversity_EO_AA.pdf