GUIDELINES FOR PROJECTS WITH EXTERNAL ORGANIZATIONS

(Version: December 15, 2014)

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This document provides guidelines that ISyE instructors are expected to consider and follow for any courses (excluding individual instruction courses) that entail projects with external organizations (including, but not limited to, privately and publicly held companies, non-profits, associations, government agencies, hospitals, and other service organizations.)

It is expected that adherence to these guidelines will result in
- greater assurance that instructors meet minimum expectations pertaining to course-project-related issues, and
- a better learning experience for students doing the projects.

Note: In the remainder of the document, we will use the term “project” to denote “project with an external organization”.

1. Introduction of projects in existing or new courses:
   a) For existing courses that do not have projects and wish to add one: The proposal has to be submitted to the Academic Affairs Cluster for review and go through the formal course change process.
   b) For newly proposed courses (ISyE 601): New course proposals need to be submitted for review and approval by the Academic Affairs Cluster

2. Factors to consider in choosing organizations for projects:
   a) Organizations and projects should be chosen such that the instructor does not have a conflict of interest in accordance with university guidelines.
   b) Time spent on organization visits and interactions should be considered in the overall workload of the course (totaling around 9 hours of weekly student effort for a 3 cr course).
   c) Travel time + meeting time at organization preferable to be 4 hours or less per visit; Hence, preference should be given to organizations that are reasonably close to campus so that less time is spent on travel relative to on-site at the organization.
   d) Organization should be committed to work with the student-team for the course of the semester, and be willing to provide a key contact (internal resource) to work with the student-team.
e) A secondary consideration is the past experience and long-term relationship potential in working with the organization.

3. **Ensuring that the project proposals are suitable/appropriate for the course**
   
a) When the student-team finds the project, a project proposal needs to be prepared by students describing the project opportunity, goal, team structure as well as an endorsement from the company. This proposal needs to be reviewed and approved by the instructor early in the semester to ensure that the project is appropriate for the course, and that adequate time remains in the semester for successful completion of the project. Anticipated time commitment for the project needs to be reasonable and commensurate with the total workload for the course.

b) When the instructor finds the project, then it is expected that the instructor will provide students with an adequate project description (including project background and goals).

c) The project needs to be well-aligned with the educational objectives and learning outcomes of the course. The final deliverables of the project need to demonstrate the learning outcomes of the course.

4. **Grading/assessment of projects:**
   
a) The instructor should develop rubrics to assess consistently the student performance in the projects and to give students guidance for preparing their work.

b) Feedback from the external organization is expected to be solicited and encouraged. The feedback can help identify opportunities for improvement in the process of doing projects with external organizations.

c) Student peer evaluation is encouraged

*See Appendix A for sample rubrics; See Appendix B for sample student peer evaluation form.*

5. **Dealing with Intellectual Property and NDA issues:**
   
a) Issues pertaining to any potential IP resulting from the project will be addressed on a case-by-case basis in accordance with the University of Wisconsin-Madison’s policies and procedures pertaining to IP.

b) The instructor is responsible for addressing any possible NDA issues prior to the beginning of the project.

6. **Department support for projects:**
   
a) The Department will cover travel expenses according to the campus policy in this regard.

b) Under exceptional circumstances, support may be available for other project expenses.

c) The department will not provide any support to recruit external organizations for projects.
d) Projects with UWHC need to be coordinated through ISyE Dept. Requests from instructors for course projects with UWHC or UW Medical Foundation should be submitted to the ISyE Dept Chair or designated contact person preferably 2 months prior to start of the semester.

e) For making project-related telephone calls, the ISyE Dept will permit students to check out the speakerphone and use it in a conference room.

f) The Department will provide support for reserving UW Car Fleet vehicles. Requests for reserving UW Car Fleet can be submitted by the instructor and students in the course, and need to be submitted to the ISyE Department front office. It is recommended that reservation requests be submitted at least 72 hours in advance of the proposed travel date. If UW Car Fleet vehicle is not available on the desired travel date, then students are responsible for making alternate arrangements (such as changing the date of the trip or using a personal vehicle). To reserve a car fleet vehicle or to get reimbursed for use of personal vehicle, students need to have UW Car Fleet authorization. The instructor is responsible for informing students regarding UW Car Fleet authorization procedure and policies, and provide the UW Car Fleet Authorization form and a handout with appropriate instructions. (See Appendix C for sample handout).

g) The ISyE Department will provide support for submission of the NDA request to the campus. Subsequent follow-up, negotiations, etc. between the campus and the external organization need to be coordinated by the instructor.

h) The ISyE Department will provide staff support for all course projects regardless of whether they are with an external organization that is a member of a consortium/center or not.

7. Should the department charge external organizations for course projects?

Due to resource constraints, the department is not currently in a position to implement a practice of charging external organizations for course projects. If a student-team project in a course is used to meet a commitment made by a center or consortium to one of its members, then the course instructor needs to disclose this to the department chair.

8. Individual expectations for instructors and students with regard to each of the following steps in project execution:

a) Identifying the project opportunity
   - Instructor and/or student is expected to identify the project opportunity at an external organization, have preliminary discussion with the organization to clarify the project opportunity, and get commitment from the organization.

b) Assessing suitability as a course project
   - The instructor is responsible for assessing suitability of the project opportunity

c) Creation of a preliminary Project Charter
• If the project is identified by the instructor, then a project description should be provided by the instructor to the students

d) Formation of student-teams
• Formation of student-teams can be done either by the instructor or by students themselves. If students form the teams themselves, then the instructor should ensure that each student is assigned to a team.

e) Preparing the student-teams for the project
• The instructor needs to provide appropriate and timely guidance to students to ensure a successful project

f) Scheduling the project kick-off meeting
• In general, the student-team coordinates a mutually convenient date/time for the kickoff meeting; For UWHC, they specify the kick-off date.

g) Arrangement of transportation for kick-off meeting (and subsequent visits) at locations outside Madison public transportation network
• At the beginning of the semester, the instructor is required to provide students with guidance and instructions related to transportation options and policies. (See Appendix C).
• Instructors are also encouraged to secure reservations, prior to the start of the semester, for campus fleet vehicles for the project kick-off meeting.

h) Finalization of Project Charter and Project Execution Plan and instructor review and feedback
• It is suggested that the Instructor’s review includes consideration of the following:
  o Evaluation of these documents to ensure alignment between company expectations and course learning objectives
  o Assessment of project activities to ensure that they are not unreasonable in terms of amount of time and types of work for the students
  o Fair distribution of workload amongst the students in the team
  o Use of appropriate IE tools, and rigor of the modeling, analysis and inference

i) Risk mitigation and recourse planning when things don’t go as planned (e.g., not having access to necessary data/information/resources, team conflicts, etc.)
• It is the students’ responsibility to inform the instructor as soon as possible if they encounter any difficulties in the successful execution of their project. The instructor will work with the parties involved to determine potential solution options.

j) Instructor is expected to provide feedback to the students at key stages of project execution

k) Final project report/presentation:
• The instructor is expected to provide guidelines and guidance to the students regarding the requirements for the final project report and/or presentation.

l) Feedback from project sponsors
• The students and/or instructors are expected to gather feedback from the project sponsor.

m) Thank you and acknowledgment of sponsors
• The students and/or instructors are expected to provide thanks and acknowledgement of sponsors at the conclusion of the project.

9. Additional expectations for students:

a) Commitment to the project and to the team
   • Faculty member is encouraged to communicate the need for commitment to the project and to the team, and use a Student Peer Evaluation form that can be considered in determining the final grade of individual students. (See Appendix)

b) Mode and frequency of communication with project sponsors and on-site visits
   • Once the student team is formed, it is the team's responsibility to maintain regular communication with the project sponsor. Student team is strongly encouraged to designate one person on the team as the point of contact to serve as the liaison between the company and the team.

c) Professional behavior in interactions with external organizations
   • Students are expected to act professionally and dress appropriately for the nature of the company visit. This includes, but is not limited to: arriving on-time to meetings, and preparing for meetings to ensure efficient and effective use of people’s time and resources – This may involve creation of meeting agenda and related communications.

d) Project presentations and reports
   • Student-teams need to prepare and deliver project presentations and reports in accordance with the grading rubrics developed by the instructor, as well as expectations and needs of the project sponsor.

e) Honoring confidentiality of data; Storage and managing of project data/information
   • Student-teams need to treat company-confidential information with due diligence and care.
### Appendix A: Sample Grading Rubric

Project Report Scoring Sheet Template (from ISyE 515)

Team Number __________

<table>
<thead>
<tr>
<th>Factor #</th>
<th>Factor Description</th>
<th>Points</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Clear description of the process and criteria for selecting this “Kaizen” project</td>
<td>5</td>
<td></td>
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<tr>
<td>2</td>
<td>Clear definition of the problem(s) in this project</td>
<td>10</td>
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<tr>
<td>3</td>
<td>Clear definition of and appropriate methods used to define the root cause(s) of the problem</td>
<td>10</td>
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<tr>
<td>4</td>
<td>Clear definition of the project objectives (Aim Statement)</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Clear definition and consideration of both customer and supplier needs and requirements</td>
<td>5</td>
<td></td>
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<tr>
<td>6</td>
<td>Appropriate use of measures to “keep score” and evaluate the effectiveness of the solution</td>
<td>10</td>
<td></td>
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<tr>
<td>7</td>
<td>Appropriate use of management and planning tools presented in the course</td>
<td>20</td>
<td></td>
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<tr>
<td>8</td>
<td>Consideration of the economic, as well as ethical and societal issues, associated with the proposed or implemented solution</td>
<td>10</td>
<td></td>
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<tr>
<td>9</td>
<td>Report includes an “executive summary”, is written in a “story board” sequence clearly addressing the PDCA phases of the project, and is well written/easy to read</td>
<td>20</td>
<td></td>
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<tr>
<td>10</td>
<td>Total length of the report (and appendices) is less than 25 pages double-spaced, excluding the cover page and TOC. (+ 5 pages)</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

100
# Project Presentation Scoring Sheet Template (from ISyE 515)

Your Name: ____________________________ Date: ________________

<table>
<thead>
<tr>
<th>Team #</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>How well did the team define the project motivation and project goal/objectives?</td>
<td></td>
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<tr>
<td>2</td>
<td>How well did the team perform the situation analysis (e.g., current state analysis to guide process improvement; requirements gathering/definition to guide new process/system design; etc.)?</td>
<td></td>
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<tr>
<td>3</td>
<td>How well did the team choose and use suitable measures/metrics to guide the process/system improvement or design?</td>
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<tr>
<td>4</td>
<td>How well did the team identify/develop alternative solution ideas and assess/prioritize them?</td>
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<tr>
<td>5</td>
<td>How well did the team justify their solution and make a business case for it?</td>
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<tr>
<td>6</td>
<td>How would you rate the solution and action plan proposed or implemented by the team?</td>
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<tr>
<td>7</td>
<td>How well did the team consider the solution/action plan’s potential impact from people, process, and technology perspectives? Change management?</td>
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<td>8</td>
<td>How would you rate the team’s use of appropriate IE methods and tools (data gathering, modeling, analysis, etc.) in the entire project?</td>
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<td>9</td>
<td>How well did the team present their project and results?</td>
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<tr>
<td>10</td>
<td>Overall, how well did the team perform the project and achieve the project goal?</td>
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**Please Insert the Totals**

<table>
<thead>
<tr>
<th>Scoring System</th>
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<tbody>
<tr>
<td>0</td>
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<td>1</td>
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<tr>
<td>2</td>
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Appendix B: Sample Student Peer Evaluation Template

Your Name: ________________________________

Team Number _____________________________

Please evaluate the contribution of each team member, **including you**, using the following form and the specified scoring system.

<table>
<thead>
<tr>
<th>Names of Team Members</th>
<th>Punctuality &amp; attendance at team meetings</th>
<th>Participation in project through ideas and effort</th>
<th>Commitment to timely completion of team work</th>
<th>Contribution in preparation of in-class presentation</th>
<th>Contribution in preparation of final written report</th>
<th>Overall Rating</th>
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</table>

Scoring system:  
A: Excellent  
E: Very good  
I: Good  
0: Fair  
U: Poor  
X: Very poor
Appendix C: Project-related Transportation Policy:

Note that this course will involve travel to off-campus sites as part of the project experience. Public transportation and/or UW Car Fleet cars should be utilized whenever possible. Fleet cars can be reserved through Carol Anne Krueger (Room 3246 of Mechanical Engineering), with a minimum of 72 hours notice; however, you will have a much better chance of getting a fleet car if you reserve a minimum of two to three weeks in advance. Additional information regarding UW Car Fleet can be found at http://www2.fpm.wisc.edu/ppnew/fleet/motorpool_reserve.htm

If UW Car Fleet vehicle is not available on the desired travel date, then students are responsible for making alternate arrangements (such as changing the date of the trip or using a personal vehicle).

Students may also elect to use their own vehicles to travel to selected sites. If you select this option, you may be reimbursed for mileage expenses directly related to the course experience, at the lowest applicable state rate. (Note that charges for repairs, towing services, locksmith services, jump starts, traffic citations, parking tickets, fines, etc. would remain your own responsibility, and are not reimbursable.) Reimbursement requests require the name and e-mail address of the vehicle owner, and the date, departure time, return time, total round-trip mileage, and purpose of each trip. Reimbursement requests can be submitted to the ISyE Department Office (Room 3270).

Student drivers and passengers are expected to act in a responsible and appropriate manner at all times, and follow all reasonable safety precautions. In addition, student vehicles used for off-campus travel should be appropriately maintained. Please note that students who use their own vehicles, and students who accept rides from other students, do so at their own risk and assume all related liability; the University of Wisconsin-Madison does not provide liability coverage for student drivers and their passengers.

Any student who elects to drive to off-campus project sites should register as an approved driver. Note that any travel prior to receiving this approval may not be reimbursed! The attached driver authorization already includes the required department information; however, if needed, blank copies are also available at http://www.bussvc.wisc.edu/risk_mgt/DraftStudentLTE_VUA_from%20website.pdf. This form must be signed by the instructor for the class, and also by Carol Anne Krueger, the department administrator (in Room 3246 of Mechanical Engineering). Please note that it takes a minimum of 10 days to receive your approval as a driver.

If you have a driver's license from out of state, or have had a Wisconsin driver's license for less than three years and previously had an out-of-state license, you will also need to submit a notarized statement regarding your driving record, http://www.bussvc.wisc.edu/risk_mgt/notary.html. Lori Snyder, the department's payroll person (in Room 3180 of Mechanical Engineering), is a notary public; to get your statement notarized, please fill it out but DO NOT SIGN IT, and bring it to her office along with a copy of your out-of-state driver's license.