

**Title: U of I Engineering Science Building and NCSA Building Sustainability Projects for ME 470  
March 12, 2010**

**Instructors Contact Information**

**Name:** Prof. Stephen R. Platt  
**Title:** Research Associate Professor and  
ME 470 Senior Design Course Coordinator  
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**Phone:** 217-244-1411  
**Address:** 1206 W. Green St, Urbana, IL 61801  
**Organization/Department:** MechSE

**Name:** Dr. Emad W. Jassim  
**Title:** Lecturer and ME 470 Senior Design  
Project Coordinator  
**E-mail:** [jassim@illinois.edu](mailto:jassim@illinois.edu)  
**Phone:** 217-244-3634  
**Address:** 1206 W. Green St, Urbana, IL 61801  
**Organization/Department:** MechSE

**F&S Contact**

**Name:** Karl Helmink  
**Title:** Mechanical Engineer, Retro Commissioning  
**E-mail:** [khelmink@uiuc.edu](mailto:khelmink@uiuc.edu)  
**Phone:** 217-244-6426  
**Address:** 1501 S. Oak St., M/C 821, Urbana, IL 61801  
**Organization/Department:** Facilities and Services

**1. Course Narrative:**

- **Course goals:**

ME 470 is the capstone UIUC Mechanical Science and Engineering (MechSE) senior design course. Its purpose is to provide students with open-ended problem-solving experiences that require them to synthesize and apply knowledge they have gained through their coursework by solving real-world problems. With guidance from MechSE faculty, each 3-4 person student team develops skills to address technical challenges while also learning to work together to meet time and budget constraints. Individual and group communication skills are refined by delivering written and oral reports that document project progress and results. We propose two campus energy-related projects, one each in the Fall 2010 and Spring 2011 semesters. Each project will require a student team to identify opportunities that reduce utility costs in a campus building. We expect that the Engineering Science and the NCSA buildings will be the facilities that will be evaluated. These choices are made so that the senior design projects are completed in coordination with the Facilities and Services retro-commissioning team work. Opportunities investigated will include physical changes to the buildings and infrastructure, and operational, behavioral, and cultural changes. Barriers to implementation will also be considered. Preliminary design and lifecycle cost analyses of the recommendations will be conducted to determine which recommendations are most feasible. Student teams will provide additional analysis and design that will enhance the retro-commissioning team's effectiveness and identify energy saving projects beyond the scope of the retro-commissioning team's focus.

- **Definition of sustainability and the relationship of the course/projects to this definition:**

Sustainability can be defined as curtailing present usage of resources while fulfilling current needs so that resources will be available for future generations without degradation. Past projects conducted by ME 470 Senior Design Teams have demonstrated that the energy efficiency of campus buildings can often be significantly improved in a cost-effective manner by implementing relatively straight-forward changes to the physical plant and identifying other unobtrusive ways to encourage individuals using the facilities to act in a more sustainable fashion. Improved energy efficiency reduces the use of nonrenewable resources such as coal and natural gas, which are currently used to provide power, heat, and cooling to the campus. This then helps to reduce the amount of CO<sub>2</sub>, a greenhouse gas, that is released into the atmosphere as a combustion by-product. These past studies have also shown that improving energy efficiency can lead to significant cost savings, especially when changes are made to campus buildings with the highest utility expenditures. In 2009, the Engineering Science Building and NCSA Building had the 28<sup>th</sup>

and 37<sup>th</sup> highest energy usage, respectively, of all UIUC campus buildings. The total annual utility bill for these two buildings is approximately \$1,200,000 (\$700,000 for Engineering Science and \$500,000 for NCSA). The goals of the proposed projects are to develop methods and designs to reduce the energy usage for the Engineering Science and NCSA buildings by at least 20% each, with a projected total annual savings of approximately \$250,000.

- **Longevity and/or permanence of project results:**

The information gathered and designs developed during similar past ME 470 Senior Design projects have become extremely valuable resources that have been used to guide and inform subsequent Senior Design project teams. As these projects continue, the information repository will grow and more effective designs and approaches can be developed. These project results are archived indefinitely and are available for potential use across and beyond campus. Many of the improvements implemented as a result of these projects will support energy efficiency and sustainability efforts on campus for years beyond the end of the individual projects. Furthermore, students participating on these projects gain valuable tools and experience that they can use throughout their careers specifically with regard to making sustainability an important aspect of engineering design.

- **Previous projects and student interest:**

During the Fall 2008 semester the MechSE Department accommodated a very similar Senior Design project to those proposed here. During the Fall 2008 project, “Design of systems to reduce energy consumption of the Mechanical Engineering Laboratory,” the students worked in coordination with and with guidance from the F&S retro-commissioning team. The students learned how to identify methods, analyzed various energy conservation measures, and developed schematic designs to save an estimated \$169,000 per year (24% reduction) with an estimated initial cost of \$243,000. Many of the proposed solutions were subsequently implemented by the F&S retro-commissioning team. During the Fall 2009 semester a Senior Design team worked on the U of I Siebel Center Energy Reduction Project thanks to funding from the University of Illinois Student Sustainability Committee. The solutions proposed by this Team are estimated to reduce utility use by about 16%, corresponding to an annual cost savings of approximately \$225,000. Other similar projects that have been conducted or are currently underway with the collaboration of F& S include:

- Advanced computations building cold isle containment
- Design of a water side economizer for NCSA's Blue Waters supercomputing building
- Design of systems to reduce energy consumption CSL
- Design of systems to reduce energy consumption Loomis
- Design of systems to reduce energy consumption MRL

These past and current projects will serve as guides for the projects proposed here. Student interest in these types of projects is historically very high. At the start of each semester student teams are asked to indicate their preferences as to which projects they would like to work on. Projects of the type proposed here are often some of the most sought after. We anticipate this interest to continue.

- **Location:**

The studies and designs will likely focus on the Engineering Science Building and NCSA Building. These locations were identified with the guidance of Facilities and Services.

## **2. Course outline**

- The first building project/course will be conducted during the Fall 2010 semester, and the second project/course will be conducted during the Spring 2011 semester. The proposed work will take place ahead of the retro-commissioning team so that the student findings and designs can be more readily implemented.

The timeline/deliverables/content for the course will be very similar if not identical (except for changes in dates) to this semester's calendar (a copy of which is attached to this proposal) available at the following URL:

<https://www-s.mechse.uiuc.edu/courses/me470/content/calendar.php>

## **3. Budget**

- The MechSE Department requests an \$8,000 donation (\$4,000 per student team per semester) to cover expenses for the Fall 2010 and Spring 2011 course projects. A typical project is executed by 3-4 students for one semester. The project is performed by students in residence at UIUC under the direction of one of our faculty members. The University has excellent facilities for the students to carry out their design work, including state-of-the-art computers and software for CAD/CAM, finite element analysis, fluid flow simulation, and so forth. Additional laboratories provide our students with access to state-of-the-art rapid prototyping equipment, machine tools, computers, and associated software for design and analysis work. A course such as this requires considerable additional resources including graduate assistant salary, travel costs to visit company sponsors, building and testing prototypes, and running computer simulations. The proposed budget will be used to help offset some of these costs.

## **4. Approval: see letter attached**

## **5. See Vita attached**

UNIVERSITY OF ILLINOIS  
AT URBANA-CHAMPAIGN

Department of Mechanical Science and Engineering  
158 Mechanical Engineering Building  
1206 West Green Street  
Urbana, IL 61801-2906



**James W. Phillips**  
*Professor and Associate Head*

Student Sustainability Committee  
University of Illinois at Urbana-Champaign

March 11, 2010

**Re: UI building sustainability projects**

Dear Committee,

The Mechanical Science and Engineering Department will be offering ME 470 in the Fall 2010 and Spring 2011 semesters. We have approved the incorporation of U of I building sustainability projects among other projects in this course.

Our senior design project course ME 470 is the required capstone design course in the Mechanical Engineering curriculum. Students in Engineering Mechanics often elect this course to meet their capstone design requirement as well. We are fortunate to have a well-organized senior design experience for our students, and the UI building sustainability projects are ideally suited for this course.

Sincerely yours,

*James W. Phillips*

James W. Phillips, Ph.D., P.E.

xc: Dr. Emad W. Jassim, P.E.

# STEPHEN ROBERT PLATT

## Contact Information

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Email: [srplatt@illinois.edu](mailto:srplatt@illinois.edu)

Dept. of Mechanical Science and Engineering  
University of Illinois at Urbana-Champaign

## Education

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- The University of Chicago** Chicago, IL  
*Doctor of Philosophy, Astronomy and Astrophysics, August, 1991.*  
*Master of Science, Astronomy and Astrophysics, August, 1984.*
- University of Nebraska-Lincoln** Lincoln, NE  
*Master of Science, Mechanical Engineering, August, 2003.*
- Williams College** Williamstown, MA  
*Bachelor of Arts, Physics and Astronomy, May, 1983.*

## Professional Experience

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- University of Illinois at Urbana-Champaign, Department of Mechanical Science and Engineering** Urbana, IL  
*2008 to present, Research Associate Professor*
- University of Nebraska-Lincoln, Department of Mechanical Engineering** Lincoln, NE  
*2006 to 2008, Research Associate Professor*
- University of Nebraska-Lincoln, Department of Mechanical Engineering** Lincoln, NE  
*2003 to 2006, Research Assistant Professor*
- University of Nebraska-Lincoln, Department of Mechanical Engineering** Lincoln, NE  
*2001 to 2003, Graduate Research Assistant*
- University of Nebraska-Lincoln, Snow & Ice Research Group** Lincoln, NE  
*1998 to 2000 Research Associate Professor*
- University of Arizona, Steward Observatory** Tucson, AZ  
*1997 to 1998 Staff Scientist*
- The University of Chicago, Department of Astronomy and Astrophysics** Chicago, IL  
*1994 to 1997 Postdoctoral Research Associate*
- Princeton University, Department of Physics** Princeton, NJ  
*1991 to 1994 Postdoctoral Research Associate*

## Selected Peer-Reviewed Journal Publications

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- Platt, S.R., Hawks, J.A., and Rentschler, M., (2009), "Vision and Task Assistance Using Modular Wireless In Vivo Surgical Robots," *IEEE Trans. on Biomedical Engineering*, 56(6): 1700-1710.
- Rentschler M., Platt S.R., Berg, K., Dumpert J., Oleynikov D., Farritor S., (2008) "Miniature *In Vivo* Robotics for Remote and Harsh Environments," *IEEE Trans on Inf Tech in Biomed*, 12(1): 66-75.
- Rentschler M., Dumpert J., Platt S.R., Farritor S., Oleynikov D., (2007) "Natural Orifice Surgery with an Endoluminal Mobile Robot," *Journal of Surgical Endoscopy*, 21(7): 1212-1215.
- Rentschler M., Dumpert J., Platt S.R., Iagnemma K., Oleynikov D., Farritor S., (2007) "An *In Vivo* Mobile Robot for Surgical Vision and Task Assistance," *ASME J of Medical Devices*, 1(1): 23-29.
- Rentschler M., Platt S.R., Dumpert J., Farritor S., Oleynikov D., (2006) "*In Vivo* Laparoscopic Robotics," *International Journal of Surgery*, 4(3): 167-171.
- Platt, S.R., Farritor, S., Garvin, K., and Haider, H. (2005a) "The Use of Piezoelectric Ceramics for Electrical Power Generation within Orthopaedic Implants," *IEEE/ASME Transactions on Mechatronics*, 10(4): 455-461.
- Platt, S.R., Farritor, S., and Haider, H. (2005b). "On Low-Frequency Electric Power Generation with PZT Ceramics," *IEEE/ASME Transactions on Mechatronics*, 10(2): 240-252.

## Selected Patents

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- Oleynikov, D., Farritor, S., Platt, S.R., Rentschler, M., Dumpert, J., "Surgical Camera Robot" U.S. Patent #7,339,341; issued March 04, 2008; Continuation in Part of #7,042,184; Pan & Tilt Camera.
- Farritor, S., Oleynikov, D., Platt, S.R., Rentschler, M., Dumpert, J., "Robot for Surgical Applications" U.S. Patent #7,372,229; issued May 13, 2008; Continuation of #7,126,303; Biopsy Robot.
- Oleynikov, D., Farritor, S., Hadzialic, A., Platt, S.R., "Robot for Surgical Applications" U.S. Patent #7,492,116; issued February 17, 2009; Continuation of #7,199,545; Mobile Camera Robot.

**Curriculum Vitae**  
**Emad W. Jassim, Ph.D., P.E.**

Dept. of Mechanical Science and Engineering  
University of Illinois at Urbana-Champaign

Phone: (217) 244-1411  
e-mail: jassim@illinois.edu

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**EDUCATION**

- Ph.D. University of Illinois Department of Mechanical Science and Engineering  
at Urbana-Campaign, obtained in August 2006  
Dissertation: Probabilistic Flow Regime Map Modeling of Two-phase Flow  
Graduate GPA: 3.90/4.00
- M.S. University of Illinois Department of Mechanical and Industrial Engineering  
at Urbana-Campaign, obtained August 2001
- B.S. University of Illinois Department of Mechanical and Industrial Engineering  
at Urbana-Campaign, obtained Dec. 1999  
Undergraduate GPA: 4.0 / 4.0 Highest Honors

**EMPLOYMENT**

- 7/2007 to present **University of Illinois Department of Mechanical Science and Engineering**  
Position: Senior Design Project Coordinator and Lecturer
- 5/2007 to 8/2007 **National Center for Supercomputing Applications**  
Position: Visiting Research Associate
- 8/2006 to 5/2007 **University of Illinois Department of Mechanical Science and Engineering**  
Position: Visiting Assistant Professor
- 8/2003 to 8/2006 **University of Illinois Department of Mechanical Science and Engineering**  
Position: Graduate Research Assistant under Dr. Ty A. Newell and Dr. John C. Chato  
Thesis title: "Probabilistic Flow Regime Map Modeling of Two-phase Flow"
- 9/2001 to 9/2003 **Henneman Raufeisen and Associates Inc. Industrial Technology Group (ITG)**  
Position: Project Engineer
- 1/2000 to 8/2001 **University of Illinois Department of Mechanical and Industrial Engineering**  
Position: Graduate Research Assistant under Dr. Ty Newell and Dr. John Chato

**SELECTED AWARDS & HONORS**

- 2008 UIUC List of Teachers Ranked as Excellent
- 2008 Professional Engineer license in the State of Illinois
- 2005-2006 Intel research program mentor for 2 undergraduate students (outstanding mentor in 2006)
- 2004-2006 U of I Department of Mechanical & Industrial Engineering Graduate Fellowship
- 2000-2001 U of I Department of Mechanical & Industrial Engineering Graduate Fellowship
- 2000 Bronze Tablet

**SELECTED PUBLICATIONS**

- E.W. Jassim, T.A. Newell, and J.C. Chato, Prediction of refrigerant void fraction in horizontal tubes using probabilistic flow regime maps, *Experimental Thermal and Fluid Science*, Volume 32, Number 5, 2008, Pages 1141-1155.
- E.W. Jassim, T.A. Newell, and J.C. Chato, Prediction of two-phase condensation in horizontal tubes using probabilistic flow regime maps, *International Journal of Heat and Mass Transfer*, Volume 51, Number 3-4, 2008, Pages 485-496.
- E.W. Jassim, T. A. Newell, J. C. Chato, Probabilistic Determination of Two-Phase Flow Regimes in Horizontal Tubes Utilizing an Automated Image Recognition Technique, *Experiments In Fluids* Volume 42, 2007, Pages 563-573.
- E.W. Jassim, T. A. Newell, and J. C. Chato, Two-phase Flow Visualization in Chevron and Bumpy Style Flat Plate Heat Exchangers, *Heat Transfer Engineering*, Volume 27, Number 9, 2006, Pages 20-27.
- E.W. Jassim, T. A. Newell, Prediction of Two-phase Pressure Drop and Void Fraction in Microchannels Using Probabilistic Flow Regime Mapping, *International Journal of Heat and Mass Transfer*, Volume 49, 2006, Pages 2446-2457.

## Course Calendar

| <b>Date</b>                          | <b>Deliverable/Lecture Topic</b>  | <b>Other Information</b>   |
|--------------------------------------|---|--|
| <b>Mon Jan 18</b><br>8:00 AM         | <b>Deadline for Teammate Preferences</b><br>Students  | <b>Things to do:</b><br>1. Enter teammate preferences online by 8 AM                         |
| <b>Tue Jan 19</b><br>9:00 AM         | <b>Lecture (112 Transportation)</b><br>Course Introduction and Resources<br>Steve Platt , Emad Jassim, Bob Coverdill            | <b>Download:</b><br>1. Course Syllabus<br>2. Lecture Notes                                   |
| <b>Tue Jan 19</b><br>12:00 Noon      | <b>ME 470 Faculty &amp; TA Lunch</b><br>Course Review and Discussion<br>Steve Platt, Emad Jassim, Bob Coverdill, and David Kees | <b>Download:</b><br>1. Meeting Handout   |
| <b>Wed Jan 20</b><br>12:00 Noon      | <b>Deadline for Project Preferences</b><br>Student teams and Faculty Advisors   | <b>Things to do:</b><br>1. Enter project preferences online by 12 Noon                       |
| <b>Tue Jan 26</b><br>9:00 AM         | <b>Lecture (112 Transportation)</b><br>Project Proposal Requirements<br>Steve Platt   | <b>Download:</b><br>1. Lecture Notes<br>2. Project Proposal Guidelines<br>3. Sample Proposal |
| <b>Fri Jan 29</b><br>5:00 PM         | <b>Deadline to Complete Logbook Check #1</b><br>TAs and Student Teams   |  |
| <b>Tue Feb 02</b><br>9:00 AM         | <b>Lecture (112 Transportation)</b><br>Technical Writing<br>Steve Platt   | <b>Download:</b><br>1. Lecture Notes   |
| <b>Mon Feb 08</b><br>5:00 PM         | <b>Deadline to Upload Project Proposals</b><br>Student Teams  | <b>Upload:</b><br>1. Proposal Report by 5 PM   |
| <b>Tue Feb 09</b><br>8:00 AM         | <b>Project Proposal Presentations</b><br>(See schedule for classroom locations)<br>Faculty Advisors and TAs                     | <b>Download:</b><br>1. Project Proposal Report and Presentation Schedule                     |
| <b>Thr Feb 11</b><br>8:00 AM         | <b>Project Proposal Presentations</b><br>(See schedule for classroom locations)<br>Faculty Advisors and TAs                     | <b>Download:</b><br>1. Project Proposal Report and Presentation Schedule                     |
| <b>Thr Feb 11</b><br>5:00 PM         | <b>Deadline for TA Grading of Project Proposal Reports</b><br>TAs hand deliver reports to Faculty Advisors                      |  |
| <b>Mon Feb 15</b><br>5:00 PM         | <b>Deadline for Faculty Advisor Grading of Project Proposal Reports</b><br>TAs pick up graded reports from Faculty Advisors     |  |
| <b>Tue Feb 16</b><br>ME 470 Syllabus | <b>Guest Lecture (112 Transportation)</b>   | <b>Download:</b>   |

|                              |  |  |
|------------------------------|--|--|
| 9:00 AM                      | Design Spec and Concept Selection<br>Professor Mike Philpott   | 1. Lecture Notes   |
| <b>Tue Feb 16</b><br>5:00 PM | <b>Deadline for TAs to Post Project Proposal Grades</b><br>TAs   |  |
| <b>Thu Feb 18</b><br>5:00 PM | <b>Deadline to Upload Revised Project Reports</b><br>Student Teams   | <b>Upload:</b><br>1. Revised Project Proposals by 5 PM<br>2. Project Proposal Presentation by 5 PM |
| <b>Fri Feb 19</b><br>5:00 PM | <b>Deadline to send Revised Project Proposal Reports to Project Sponsors</b><br>154 MEB Staff  |  |
| <b>Tue Feb 23</b><br>9:00 AM | <b>Guest Lecture (112 Transportation)</b><br>Manufacturing Cost Analysis<br>Professor Mike Philpott                                    | <b>Download:</b><br>1. Lecture Notes   |
| <b>Fri Feb 26</b><br>5:00 PM | <b>Deadline to Complete Logbook Check #2</b><br>TAs and Student Teams  |  |
| <b>Tue Mar 02</b><br>9:00 AM | <b>Guest Lecture (112 Transportation)</b><br>Intellectual Property Rights<br>Delphine M. Kranz<br>UIUC Office of Technology Management | <b>Download:</b><br>1. Lecture Notes   |
| <b>Tue Mar 09</b><br>9:00 AM | <b>Lecture (112 Transportation)</b><br>Status Report and Presentation Requirements<br>Steve Platt                                      | <b>Download:</b><br>1. Status Lecture Notes<br>2. Sample Status Reports                            |
| <b>Mon Mar 15</b><br>5:00 PM | <b>Deadline to Upload Status Report</b><br>Student Teams   | <b>Upload:</b><br>1. Status Report by 5 PM   |
| <b>Tue Mar 16</b><br>8:00 AM | <b>Mid-Semester Status Presentations</b><br>(See schedule for classroom locations)<br>Faculty Advisors and TAs                         | <b>Download:</b><br>1. Status Report Presentation Schedule   |
| <b>Thu Mar 18</b><br>8:00 AM | <b>Mid-Semester Status Presentations</b><br>(See schedule for classroom locations)<br>Faculty Advisors and TAs                         | <b>Download:</b><br>1. Status Report Presentation Schedule   |
| <b>Thu Mar 18</b><br>5:00 PM | <b>Deadline for TA Grading of Project Status Reports</b><br>TAs hand deliver reports to Faculty Advisors                               |  |



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|------------------------------|---|--|
| <b>Tue Mar 23</b>            | <b>No Lecture—Spring Break</b>  |  |
| <b>Mon Mar 29</b><br>5:00 PM | <b>Deadline for Faculty Advisor Grading of Project Status Reports</b><br>TAs pick up graded reports from Faculty Advisors |  |
| <b>Tue Mar 30</b><br>9:00 AM | <b>Guest Lecture (112 Transportation)</b><br>Engineering Ethics, Part I<br>Professor Mike Loui, UIUC                      |  |
| <b>Tue Mar 30</b><br>5:00 PM | <b>Deadline for TAs to Post Project Status Report Grades</b><br>TAs   |  |
| <b>Thu Apr 01</b><br>5:00 PM | <b>Deadline to Upload Revised Project Status Reports</b><br>Student Teams   | <b>Upload:</b><br>1. Revised Project Status Reports by 5 PM<br>2. Project Status Report Presentation by 5 PM |
| <b>Fri Apr 02</b><br>5:00 PM | <b>Deadline to send Revised Status Reports to Project Sponsors</b><br>154 MEB Staff                                       |  |
| <b>Tue Apr 06</b><br>9:00 AM | <b>Guest Lecture (112 Transportation)</b><br>Engineering Ethics, Part II<br>Professor Mike Loui, UIUC                     |  |
| <b>Fri Apr 09</b><br>5:00 PM | <b>Deadline to Complete Logbook Check #3</b><br>TAs and Student Teams   |  |
| <b>Tue Apr 13</b><br>9:00 AM | <b>Guest Lecture (112 Transportation)</b><br>IRB and Ethical Research   | <b>Download:</b><br>1. Lecture Notes   |
| <b>Tue Apr 20</b><br>9:00 AM | <b>Lecture (112 Transportation)</b><br>Final Report & Presentation Requirements<br>Steve Platt                            | <b>Download:</b><br>1. Final Presentation and Report Notes   |
| <b>Tue Apr 27</b>            | <b>No Lecture—Work on Projects</b>  |  |
| <b>Tue Apr 27</b>            | <b>Think about Project Posters!</b><br>Student Teams  | <b>Download:</b><br>1. Project Poster Template   |
| <b>Thu Apr 29</b><br>8:00 AM | <b>Practice Presentations</b><br>Faculty Advisors and TAs   | <b>Download:</b><br>1. Practice Presentation Schedule  |
| <b>Fri Apr 30</b><br>8:00 AM | <b>Practice Presentations</b><br>Faculty Advisors and TAs   | <b>Download:</b><br>1. Practice Presentation Schedule  |

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|---------------------------------|---|--|
| <b>Tue May 04</b><br>7:30 AM    | <b>Final Presentations</b><br>Levis Center 7:30 AM – 1:00 PM<br>(including breakfast and lunch)<br>Sponsors, Student Teams,<br>Faculty Advisors and TAs | <b>Download:</b><br>1. Final Presentation and Report Schedule  |
| <b>Mon May 10</b><br>12:00 Noon | <b>Deadline to Upload Final Report</b><br>Student Teams   | <b>Upload:</b><br>1. Final Project Report by 12:00 Noon<br>2. Final Project Presentation by 12:00 Noon   |
|                                 |   | <b>Things to do:</b><br>1. Complete online Peer and Course<br>Evaluation forms by 12:00 Noon             |
| <b>Mon May 10</b><br>12:00 Noon | <b>Deadline to Upload Project Posters</b><br>Student Teams  | <b>Upload:</b><br>1. Project Poster  |
| <b>Mon May 10</b><br>5:00 PM    | <b>Deadline for TAs to Deliver Project<br/>Final Reports to Faculty Advisors</b><br>TAs   |  |
| <b>Thu May 13</b><br>12:00 Noon | <b>Deadline to Turn in Printed Copy<br/>of Final Report</b><br>Student Teams  | <b>Things to do:</b><br>1. Turn in 1 copy of printed Final Report (with<br>CDs) to 154 MEB by 12:00 Noon |
| <b>Thu May 13</b><br>5:00 PM    | <b>Deadline for Faculty Advisor Grading<br/>of Project Final Presentations &amp; Reports</b><br>TAs pick up final grades from Faculty<br>Advisors       |  |
| <b>Fri May 14</b><br>12:00 Noon | <b>Deadline for Faculty Advisors to<br/>Reconcile Final Grades</b><br>Faculty Advisors  |  |
| <b>Fri May 14</b><br>5:00 PM    | <b>Deadline to Complete Official Final<br/>Grade Entry</b><br>Steve Platt   |  |
| <b>Fri May 14</b><br>5:00 PM    | <b>Deadline to send Project Final<br/>Reports to Project Sponsors</b><br>154 MEB Staff  |  |