To: Speaker of the Rice University Faculty Senate  
Chair of the Committee on the Undergraduate Curriculum  

From: Faculty of the Rice Center for Engineering Leadership  
Office of the Dean, George R. Brown School of Engineering  

Date: September 11, 2014  
Re: Proposal for Certificate in Engineering Leadership  

In 2010, Rice graduates Ann and John Doerr helped establish the Rice Center for Engineering Leadership (RCEL) with a $15 million gift from the Beneficus Foundation. Since its launch, our mission has been to develop Rice engineers to become inspiring leaders, exceptional team members, effective communicators, and bold entrepreneurs.

This document outlines the rationale, requirements, and structure of our proposed Certificate in Engineering Leadership. The table of contents below provides a summary of our proposal’s focal areas, which address all of the requirements outlined in the Faculty Senate’s “Proposed Guidelines for Undergraduate Certificates.” As explained in this proposal, we estimate that about 100 students that are currently enrolled in our certificate courses intend to complete our certificate in engineering leadership.

If approved, our certificate will become the only four-year engineering leadership certificate in Texas and one of only a handful of educational innovations like this in the United States. While we will be joining engineering schools such as MIT, Northwestern, and Cornell in offering a certificate in engineering leadership, ours is distinct in many ways that we expect will strengthen our students’ development. Our ultimate goal is to help our students begin careers that align with the strengths they learn in our program and make a positive difference with their engineering education.

Thank you for considering our proposal.

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I. Justification

*How will the program enhance the undergraduate curriculum? What is the need or demand for the certificate program?*

Students who complete the RCEL certificate will gain a set of skills and perspectives that complement the technical knowledge that defines their Rice engineering degree. The rationale for our proposal is aligned with four contextual forces – recommendations from the National Academy of Engineering (NAE), our Dean’s and RCEL’s strategic priorities, the needs of industry, and most importantly, Rice engineering students’ interests.

The idea of infusing leadership into an engineering curriculum is grounded in changes within the larger environment of engineering education. In 2004, for example, the NAE published an influential report called “*The Engineer of 2020: Visions of Engineering in the New Century*”\(^1\). The purpose of the report was to set forth strategic recommendations for changing the way that future engineers are educated and prepared to address global technological and engineering challenges.

The report called for our universities to teach skills that are not typically covered in traditional engineering education. Table 1 summarizes these attributes, which collectively would enhance students’ abilities to have a greater impact with their degrees. All of these attributes are learned in our certificate curriculum.

<table>
<thead>
<tr>
<th>Table 1: NAE’s Attributes of the Engineer of 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Strong analytical skills</td>
</tr>
<tr>
<td>• Practical ingenuity</td>
</tr>
<tr>
<td>• Creativity and innovation</td>
</tr>
<tr>
<td>• Communication</td>
</tr>
<tr>
<td>• Business and management</td>
</tr>
<tr>
<td>• Leadership</td>
</tr>
<tr>
<td>• High ethical standards</td>
</tr>
<tr>
<td>• Professionalism</td>
</tr>
<tr>
<td>• Agility and resilience</td>
</tr>
<tr>
<td>• Lifelong learning</td>
</tr>
</tbody>
</table>

The second and third rationales for our certificate align with the priorities of our school and industry employers. Soon after arriving at Rice, Dean Thomas set forth three priorities for the Brown School of Engineering: Leadership, Internships, and Entrepreneurship. Our certificate programming provides a vehicle for delivering on all three of these priorities, which are grounded, in part, on talent development trends in professional engineering organizations. Many leading engineering organizations have leadership centers of their own (e.g., Boeing, General Electric, Caterpillar, NASA) and national surveys of professional recruiters consistently identify communication, teamwork, and leadership as among the most valued capabilities of today’s graduates.\(^2\)

The final set of rationales for our certificate arises out of our assessments of Rice engineering students’ needs and interests. Beginning in December 2011, RCEL faculty initiated a series of committees comprised of engineering school administrators, faculty, staff, and students to explore ways that RCEL

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could broaden its educational reach across the school. As part of this strategic planning, we implemented several mechanisms to assess the needs and interests of our students, including a March 2012 survey of engineering undergraduates.\(^3\) We received 333 usable responses from students across the engineering departments, and the results provided strong evidence of student interest in leadership, communication, and teamwork training.

For example, when asked to rate how important leadership skills are to becoming successful engineers, 75% of our students reported these skills as being “very important” or “crucial.” When asked to similarly rate the importance of communication and teamwork skills, students reported even stronger interest with 89% rating communication and 95% rating teamwork as “very important” or “crucial.” Based on this evidence, these three sets of skills—leadership, communication, and teamwork—have become core elements of RCEL certificate programming.

Another part of our assessment asked students about their professional aspirations. Among other things, we were interested in the extent to which our students identified with one day becoming some form of a leader. We assessed this question directly in March 2012 for all engineering students and again in August 2012 with 162 incoming freshmen. Table 2 summarizes the overall responses and one specific area is noted in red. These results suggest student interest in the areas of small group leadership and we used this data to inform the design of our certificate programming (explained later).

**Table 2: Engineering Students’ Anticipated Leadership Roles**

<table>
<thead>
<tr>
<th>Role</th>
<th>All students March 2012</th>
<th>Freshmen August 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manager of a small group</td>
<td>62%</td>
<td>58%</td>
</tr>
<tr>
<td>Manager of managers (i.e., VP)</td>
<td>44%</td>
<td>55%</td>
</tr>
<tr>
<td>Leading technical expert</td>
<td>47%</td>
<td>46%</td>
</tr>
<tr>
<td>A top-level executive (i.e., CEO)</td>
<td>32%</td>
<td>47%</td>
</tr>
<tr>
<td>Founder/owner of a business</td>
<td>29%</td>
<td>51%</td>
</tr>
<tr>
<td>Leading researcher</td>
<td>31%</td>
<td>45%</td>
</tr>
<tr>
<td>Founder/owner of a non-profit</td>
<td>12%</td>
<td>38%</td>
</tr>
<tr>
<td>Leading educator</td>
<td>15%</td>
<td>23%</td>
</tr>
<tr>
<td>Leading expert in public policy</td>
<td>10%</td>
<td>14%</td>
</tr>
<tr>
<td>Elected public official</td>
<td>5%</td>
<td>10%</td>
</tr>
</tbody>
</table>

Our initial assessments of student interest provided a starting point for developing the components of our certificate program. We followed up the survey with several other initiatives to design the key elements of our certificate, including (a) two focus groups with our engineering students, (b) the formation of a student advisory board, (c) discussions with Rice engineering faculty, and (d) visits with professional engineering firms such as NASA, Technip, Fluor, ExxonMobil, and the Boeing Leadership Center.

In developing our certificate program, we also benchmarked best practices in leadership development from programs at MIT, Northwestern, UC-San Diego, UC-Berkeley, Cornell, University of Toronto, and the University of Wisconsin-Madison. RCEL is a founding member of an international consortium of engineering leadership centers, and we have had the privilege of learning from the experiences of many others who are deploying similar programming.

Is the certificate different in structure and purpose from a minor? Is there any potential for the certificate to attract students to the detriment of existing majors and minors?

Our certificate program will focus on skills that are complementary yet distinct from our undergraduate engineering majors and minors. Similar to a minor program, our certificate is structured around a distinct and coherent body of knowledge, which is described in more detail below. Our certificate is unique from many minors, however, in that it requires less coursework and more “applied” learning experiences such as internships; leadership development planning; and other intentional, hands-on learning experiences. There are no other major or minor programs in the engineering school with which our certificate might conflict or compete.

If the certificate program is affiliated with a degree program, how will it complement that program?

In departments that require reviews from the Accreditation Board for Engineering and Technology (ABET), our programming in communication, ethics, and leadership are aligned with these academic standards and requirements. In addition, the nation’s leading academic engineering society, the NAE, has explicitly called on universities to infuse leadership into the engineering educational curriculum. Finally, earlier this summer, the American Society of Engineering Education (ASEE) formally approved the addition of a new division called “Engineering Leadership Development” (or LEAD). The creation and induction of this new division acknowledges the growing importance of infusing leadership in traditional engineering degree programs. Our certificate will become an important strategic differentiator for our school and, over time, could help attract new students and industry employers.

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4 RCEL’s Dr. David Niño is one of the founding officers of this new LEAD division of the American Society of Engineering Education.
II. Certificate Requirements

The certificate requires satisfactory completion of 10 credit hours of coursework, a professional internship which corresponds with a required course (ENGI 241, see below), and a final oral presentation.

Course requirements

The core of our certificate is built around a sequence of integrated coursework. Each of these classes, described below, emphasize different yet interrelated skill and topic areas. These skills are organized into a competency framework that is included in Appendix A-1.

Our curricular requirements are as follows and all of our syllabi are also included in the Appendices:

- **ENGI 140: Engineering Leadership Development** (2 credits, taken as a freshman or sophomore)
- **ENGI 218: Leadership Lab I** (1 credit total, taken as a freshman or sophomore)
- **ENGI 219: Leadership Lab II** (1 credit total, taken as a freshman or sophomore)
- **ENGI 241: Professional Excellence for Engineers I** (1 credit, taken as a sophomore or junior)
- **ENGI 315: Leading Teams and Innovation** (3 credits, taken as a sophomore or junior)
- **ENGI 317: Leadership Action Learning** (2 credits, taken as a junior or senior)

OR

- **ENGI 318: Leadership Lab I** (1 credit, taken as a junior or senior)
- **ENGI 319: Leadership Lab II** (1 credit, taken as a junior or senior)

Certificate Course Descriptions

**ENGI 140: Engineering Leadership Development** – a two-credit course that introduces students to engineering leadership and to RCEL’s skill and competency domains. Students engage in a semester-long autobiographical analysis of their personal strengths, motivations, and aspirations as leaders and followers. This analysis is then used to create a first draft of their engineering leadership portfolios and leadership development plans. A copy of this syllabus is provided in Appendix A-2. This syllabus includes an explanation of the reflected best-self paper (the autobiographical analysis), the leadership development plan, and the portfolio.

**ENGI 218/219: Engineering Leadership Labs** – a sequence of one-credit hour courses that provide hands-on practice and application of leadership skills and techniques in a variety of practical situations. Through challenging and interactive engineering design-build activities, role-plays, simulations, and case studies, students begin developing their own personal styles of leadership. During these classes, students will continue to update and integrate their insights about personal growth into their engineering leadership portfolios and leadership development plans. Copies of these syllabi are provided in Appendix A-4.
Certificate Course Descriptions (cont.)

**ENGI 315: Leading Teams and Innovation** – a three-credit hour course that reviews and develops the skills needed to effectively launch, develop, and lead innovative engineering teams. Through a balance of theory and practice, students learn how to diagnose and address some of the common challenges that leaders and followers face in engineering teams. A major focus of the course is on creative methods for innovating in technical contexts. During this class, students will continue to update and integrate their insights about personal growth into their engineering leadership development plans. A copy of this syllabus is provided in Appendix A-3.

**ENGI 241: Professional Excellence for Engineers** – a one-credit hour practicum course that provides guided career and professional development for engineering students as they complete real-world industrial, academic, research, or other professional internship. Through a structured internship experience, this course prepares students to assimilate quickly and to exceed employer expectations during their internships. A copy of this syllabus is provided in Appendix A-4.

**ENGI 317: Leadership Action Learning** – a two-credit hour practicum course where students apply skills acquired through the certificate courses to a specific leadership development project. Students work with faculty to identify skill-areas of interest, based on their autobiographical paper and their leadership plans and portfolios. Students then develop and engage in a structured learning experience in which they apply selected skills, receive feedback from others on skill application, assess development before and after, and deliver a final reflection on the overall learning experience. A copy of this syllabus is provided in Appendix A-4.

**ENGI 318/319: Engineering Leadership Labs** – a sequence of one-credit hour courses that expand on the applied leadership development labs presented in ENGI 218/219. Students serve as Student Coaches for the weekly ENGI 218/219 Engineering Leadership Labs (ELLs). Each student must develop, refine, and lead multiple labs. During the ELLs, Student Coaches provide guidance, feedback, and performance evaluation for ENGI 218/219 students. The course includes mandatory discussion leading, and students engage in structured self-evaluation throughout the semester. Copies of these syllabi are provided in Appendix A-4.

Current Certificate Course Enrollment

Here is a summary of enrollment levels for our courses. We estimate that approximately 100 of these current students intend to complete our certificate.

<table>
<thead>
<tr>
<th>Semester</th>
<th>Total Enrolled</th>
<th>ENGI 140</th>
<th>ENGI 218</th>
<th>ENGI 219</th>
<th>ENGI 241</th>
<th>ENGI 315</th>
<th>ENGI 318</th>
<th>ENGI 319</th>
<th>ENGI 317</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall 2013</td>
<td>102</td>
<td>34</td>
<td>37</td>
<td>Not offered</td>
<td>Not offered</td>
<td>23</td>
<td>8</td>
<td>Not offered</td>
<td>Not offered</td>
</tr>
<tr>
<td>Spring 2014</td>
<td>72</td>
<td>14</td>
<td>Not offered</td>
<td>28</td>
<td>Not offered</td>
<td>22</td>
<td>Not offered</td>
<td>8</td>
<td>Not offered</td>
</tr>
<tr>
<td>Fall 2014</td>
<td>138</td>
<td>35</td>
<td>40</td>
<td>Not offered</td>
<td>21</td>
<td>26</td>
<td>13</td>
<td>Not offered</td>
<td>3</td>
</tr>
</tbody>
</table>
Final Certificate Presentation

The final certificate presentation by each student will mark the conclusion of the certificate learning experience. This 15-minute oral presentation will highlight and synthesize the key takeaways that have shaped each student’s leadership development and perspective on engineering leadership. At least two RCEL certificate faculty and selected RCEL certificate students will attend these presentations and deliver feedback to presenters. Some questions that we anticipate will be addressed in the presentations include:

- What does it mean to be an engineering leader?
- How have the certificate activities helped you grow as a leader and member of your organization and/or community?
- What are your strengths, values, and expectations as a leader?
- What is the most important lesson you have learned about developing as an engineering leadership?
- What next steps will contribute to your future development as a leader?

RCEL faculty will each evaluate the presentation for evidence that it satisfactorily (1) addresses assigned questions in a clear and thoughtful manner, (2) provides evidence of learning and growth grounded in experiences, (3) demonstrates analysis and reflection, (4) organizes material logically, (5) uses visuals effectively, and (6) conveys and communicates a positive ethos.
III. Certificate Faculty and Advisors

Selected RCEL staff members, along with oversight of the Certificate Steering Committee, will administer the RCEL certificate and its requirements. The faculty listed below include those that will teach our certificate courses and/or advise our certificate students. As in the past, the RCEL Faculty Advisory Board will also play an important role in evaluating and continuously improving the certificate curriculum and activities. The Faculty Advisory Board meets quarterly and discussion of our certificate will become an important item on these agendas.

RCEL Certificate Faculty Members

- Ray Simar, Co-Director, Rice Center for Engineering Leadership, Professor in the Practice of Electrical and Computer Engineering
- Kazimir (Kaz) Karwowski, Executive Director, Rice Center for Engineering Leadership
RCEL Certificate Faculty Members (cont.)

- Dr. David Niño, Professor in the Practice of Engineering Leadership, Rice Center for Engineering Leadership
- Cesare Wright, Lecturer and Outreach/Leadership Specialist, Rice Center for Engineering Leadership
- Dr. Sarah Birge, Senior Lecturer in Professional and Engineering Communication, Rice Center for Engineering Leadership
- Dr. Beata Krupa, Lecturer in Professional and Engineering Communication, Rice Center for Engineering Leadership
- Dr. David Van Kleeck, Lecturer, Rice Center for Engineering Leadership

Certificate Steering Committee

This steering committee will oversee the certificate curriculum, identify and solve problems, review assessment data and information, and alert administrators of needed curricular changes. Committee members will include:

- Dr. Edwin L. (Ned) Thomas, Dean of Engineering
- Faculty Director (TBD), John and Ann Doerr Chair, Rice Center for Engineering Leadership
- Ray Simar, Co-Director, Rice Center for Engineering Leadership, Professor in the Practice of Electrical and Computer Engineering
- Kazimir (Kaz) Karwowski, Executive Director, Rice Center for Engineering Leadership
- Dr. David Niño, Professor in the Practice of Engineering Leadership, Rice Center for Engineering Leadership

Faculty Advisory Board

- Dr. Richard Baraniuk Victor E. Cameron Professor of Electrical & Computer Engineering
- Brad Burke Managing Executive Director, Rice Alliance
- Dr. John Casbarian Harry & Albert Smith Professor of Architecture
- Dr. Jane Grande-Allen Associate Professor of Bioengineering (Rotating off the board Fall 2014)
- Dr. Rob Griffin Associate Professor of Civil & Environmental Engineering
- Dr. Cyrus Mody Assistant Professor of History
- Dr. Marcia O’Malley Associate Professor of Mechanical Engineering
- Dr. Scott Rixner Associate Professor of Computer Science/Electrical & Computer Engineering
- Dr. Vivek Sarkar E.D. Butcher Chair in Engineering, Professor of Computer Science/Electrical & Computer Engineering
- Dr. Robert Stein Lena Grohlman Fox Professor of Political Science
- Dr. Richard Tapia University Professor, Maxfield-Oshman Professor in Engineering
- Dr. Rafael Verduzco Luis Owen Assistant Professor of Chemical & Biomolecular Engineering
IV. Procedures and Qualifications for Admission

Students must complete and submit a written application for admission to the RCEL Certificate program. An RCEL Admissions Committee will review applications and admit students to the program. Admission will be based on a review of the application and the student’s academic record. This committee will also perform annual evaluations of the admissions process. Information on application timeline and process is posted at http://rcel.rice.edu.

Only engineering majors (declared or anticipated) will be eligible to apply for and earn the Certificate in Engineering Leadership. Prior to matriculation, each student will sign a written form of acknowledgement and acceptance of this policy.

V. Program Learning Outcomes, Curriculum Map, and Assessment Plan

As explained earlier, our certificate is designed to positively impact our students’ abilities, motivation, and opportunities to lead. Our courses, individually and collectively, are oriented toward learning objectives that align with these three areas. The tables and paragraphs below explain these linkages and how we will assess these outcomes.

RCEL Certificate Program-Level Learning Outcomes

A. To develop and articulate a personal point of view about what leadership means and how it is effectively practiced in engineering environments.
B. To learn how to be valuable team members in engineering environments.
C. To learn how to be capable team leaders in engineering environments.
D. To communicate strategically in engineering and other interpersonal contexts.
E. To increase our students’ self-awareness and confidence about who they are and what they are able to achieve in their professional careers.
F. Our students position themselves for first jobs that align with their unique strengths and self-directed career ambitions.

Learning objectives B-D focus especially on leadership abilities in engineering environments. The substance of our programming recognizes the importance of both leadership and followership skills, particularly in a small group context. We believe that this set of learning objectives aligns with our goal of preparing students to perform effectively as individual contributors (followers) immediately after graduation.

At the program level, learning objectives A and E focus on motivation to lead. Many activities embedded within our programming focus on students developing a deep understanding of who they are and how they perform in leadership situations. We also help them contemplate future possibilities and aspirations and develop and communicate a “personal point of view” about leadership. If we can demistify what it means for our students to become leaders, and help them begin to identify more with
leading and communicate meaningfully about leadership, then we believe that our students will become more motivated to one day become a leader in their chosen area.

Finally, we have developed many activities and supportive mechanisms within our programming to help our students choose professional opportunities that fit well with their skills, values, and aspirations. Learning objective F aligns with this outcome. We believe that students will perform at their best in environments that “play to their strengths” and if our students do indeed become outstanding performers, they may likely be viewed by others as potential leaders in their chosen contexts.

RCEL Certificate Curriculum Map of Learning Outcomes

The table below provides a breakdown of how our program-level learning outcomes are aligned with our specific courses. While some topics are covered more than others, the distribution of our courses enables us to address each of our program learning outcomes at multiple points and at multiple levels across our curriculum.

Table 3: Curriculum Map of Program Learning Outcomes and Proficiency Achieved According to Bloom’s Taxonomy

<table>
<thead>
<tr>
<th>Program-Level Learning Outcomes</th>
<th>ENGI 140</th>
<th>ENGI 218/219</th>
<th>ENGI 241</th>
<th>ENGI 315</th>
<th>ENGI 317</th>
<th>ENGI 318/319</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. To develop and articulate a personal point of view about what leadership means and how it is effectively practiced in engineering environments.</td>
<td>Level 3 Apply</td>
<td>Level 3 Apply</td>
<td>Level 6 Create</td>
<td>Level 5 Evaluate</td>
<td>Level 5 Evaluate</td>
<td></td>
</tr>
<tr>
<td>B. To learn how to be valuable team members in engineering environments.</td>
<td>Level 3 Apply</td>
<td>Level 4 Analyze</td>
<td>Level 5 Evaluate</td>
<td>Level 4 Analyze</td>
<td>Level 5 Evaluate</td>
<td></td>
</tr>
<tr>
<td>C. To learn how to be capable team leaders in engineering environments.</td>
<td>Level 4 Analyze</td>
<td>Level 3 Apply</td>
<td>Level 3 Apply</td>
<td>Level 5 Evaluate</td>
<td>Level 5 Evaluate</td>
<td></td>
</tr>
<tr>
<td>D. To communicate strategically in engineering and other interpersonal contexts.</td>
<td>Level 3 Apply</td>
<td>Level 3 Apply</td>
<td>Level 3 Apply</td>
<td>Level 6 Create</td>
<td>Level 5 Evaluate</td>
<td></td>
</tr>
<tr>
<td>E. To increase our students’ self-awareness and confidence about who they are and what they are able to achieve in their professional careers.</td>
<td>Level 3 Apply</td>
<td>Level 4 Analyze</td>
<td>Level 4 Analyze</td>
<td>Level 3 Apply</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F. Our students position themselves for first jobs that align with their unique strengths and self-directed career ambitions.</td>
<td>Level 4 Analyze</td>
<td>Level 4 Analyze</td>
<td>Level 3 Apply</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
RCEL Program-Level Assessment Plan

The tables below summarize how we plan to assess our certificarte program's learning outcomes. We will use a combination of qualitative and quantitative measures and methods to understand what the students are learning. We will also use this information to evaluate and improve our programming over time. The specific assessment activities that we will use in each course are described in more detail in the course syllabi, which are provided in the appendices.

Many of the survey assessments of skills that we use are derived from a textbook that we cover entirely in two of the certificate courses. The book is by David Whetten and Kim Cameron titled Developing Management Skills (8th ed.).

Table 4: Assessment Plan for Program Learning Outcomes

<table>
<thead>
<tr>
<th>Program-Level Learning Outcomes</th>
<th>ENGI 140</th>
<th>ENGI 218/219</th>
<th>ENGI 241</th>
<th>ENGI 315</th>
<th>ENGI 317</th>
<th>ENGI 318/319</th>
<th>Final Presentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. To develop and articulate a personal point of view about what leadership means and how it is effectively practiced.</td>
<td>Reflected Best Self (RBS) Paper</td>
<td>RBS Paper</td>
<td>Reflective journal</td>
<td>Vision Presentation</td>
<td>RBS Paper</td>
<td>Action learning projects Presentation</td>
<td>Reflective journal</td>
</tr>
<tr>
<td>B. To learn how to be valuable team members in engineering environments.</td>
<td>RBS Paper</td>
<td>Portfolio Survey assessments</td>
<td>RBS Paper</td>
<td>Peer feedback</td>
<td>Reflective journal</td>
<td>Internship Performance Review</td>
<td>Team projects Survey assessments</td>
</tr>
<tr>
<td>C. To learn how to be capable team leaders in engineering environments.</td>
<td>RBS Paper</td>
<td>Portfolio Survey assessments</td>
<td>RBS Paper</td>
<td>Peer feedback</td>
<td>Reflective journal</td>
<td>Internship Performance Review</td>
<td>Team projects Survey assessments</td>
</tr>
</tbody>
</table>
Table 4: Assessment Plan for Program Learning Outcomes (cont.)

<table>
<thead>
<tr>
<th>Program-Level Learning Outcomes</th>
<th>ENGI 140</th>
<th>ENGI 218/219</th>
<th>ENGI 241</th>
<th>ENGI 315</th>
<th>ENGI 317</th>
<th>ENGI 318/319</th>
<th>Final Presentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>D. To communicate strategically in engineering and other interpersonal contexts.</td>
<td>Survey assessments</td>
<td>Peer feedback</td>
<td>Reflective journal</td>
<td>Vision Presentation</td>
<td>Action learning projects</td>
<td>Peer feedback</td>
<td>Final Presentation</td>
</tr>
<tr>
<td>E. To increase our students' self-awareness and confidence about who they are and what they are able to achieve in their professional careers.</td>
<td>RBS Paper Portfolio Leadership Development Plan Survey assessments</td>
<td>RBS Paper Peer feedback Leadership Development Plan</td>
<td>RBS Paper Peer feedback Leadership Development Plan</td>
<td>Team projects Leadership Development Plan Survey assessments</td>
<td>RBS Paper Action learning projects Leadership Development Plan Survey assessments</td>
<td>Peer feedback Lab Leadership Self-assessment</td>
<td>Final Presentation</td>
</tr>
<tr>
<td>F. Our students position themselves for first jobs that align with their unique strengths and self-directed career ambitions.</td>
<td>Interviews with engineering Leaders Leadership Development Plan</td>
<td>Leadership Development Plan</td>
<td>Reflective journals Leadership Development Plan</td>
<td>RBS Paper</td>
<td>Exit survey</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
VII. Supporting Letter from Dean Ned Thomas, George R. Brown School of Engineering

EDWIN L. "NED" THOMAS
WILLIAM AND STEPHANIE SICK DEAN OF ENGINEERING PROFESSOR, MATERIALS SCIENCE AND NANOENGINEERING PROFESSOR, CHEMICAL AND BIOMOLECULAR ENGINEERING

Letter of Support

DATE: July 18, 2014
TO: Committee on the Undergraduate Curriculum and Faculty Senate
FROM: Dean Ned Thomas
George R. Brown School of Engineering

SUBJECT: Letter of Support for the Rice Center for Engineering Leadership

It is my pleasure to write in strong support of the Engineering Leadership Certificate proposal being submitted to the Committee on Undergraduate Curriculum of the Faculty Senate by the Rice Center for Engineering Leadership (RCEL).

As Dean of the School of Engineering, I have encouraged the development of RCEL’s certificate in engineering leadership over the past year, and I feel strongly that RCEL’s program leading to the certificate greatly enhances the traditional engineering education that students receive at Rice by providing leadership and communication skills not typically covered in the existing Rice engineering curriculum.

RCEL’s curriculum was designed by the RCEL staff and has been reviewed by both the RCEL Faculty Advisory Board (12 members from 10 depts.) and a separate internal oversight committee. The proposed certificate positively supplements the curricula of each of the departments within the School of Engineering.

In conclusion, I wholeheartedly support the efforts of the Rice Center for Engineering Leadership as they seek to establish a certificate in engineering leadership. RCEL’s certificate will greatly improve the leadership capabilities of every student that completes the requirements and help establish distinctiveness to the Rice engineering curriculum.

Sincerely yours,

[Signature]

Edwin L. Thomas, NAE
Dean of Engineering
VIII. Official Name of the Certificate and Description for the General Announcements

The Certificate in Engineering Leadership is a sequence of courses and a final presentation offered through the Rice Center for Engineering Leadership. The Certificate enhances the traditional undergraduate education by developing skills that are not expressly covered in the Rice Engineering curriculum. The targeted learning experiences provided by the Certificate program are organized around four interrelated competency domains—Personal, Interpersonal, Management, and Leadership. Faculty within the Brown School of Engineering teach courses which cover topics such as leadership styles, engineering ethics, project management, engineering team building, and motivational techniques.

The Certificate in Engineering Leadership requires the completion of 10 credit hours of coursework combined with a final presentation. Requirements include satisfactory completion of a series of courses and labs ranging from 1 to 3 credits, an internship, development of a portfolio, and a presentation. All 10 of the required 10 hours must be unique to the Certificate; that is, those 10 credit hours must not otherwise be counted toward the student’s major or minor degree requirements.

Upon completion of the Certificate’s requirements, students receive formal recognition on their transcript and a certificate provided by Rice University’s Registrar.

After completing the Certificate, students will be able:

• To develop and articulate a personal point of view about what leadership means and how it is effectively practiced in engineering environments.
• To learn how to be valuable team members in engineering environments.
• To learn how to be capable team leaders in engineering environments.
• To communicate strategically in engineering and other interpersonal contexts.
• To increase our students’ self-awareness and confidence about who they are and what they are able to achieve in their professional careers.
• Our students position themselves for first jobs that align with their unique strengths and self-directed career ambitions.
APPENDICES

A-1 RCEL Certificate Competencies, Skills, and Components
A-2 Syllabus for ENGI 140: Engineering Leadership Development
A-3 Syllabus for ENGI 315: Leading Teams and Innovation
A-4 Syllabi for ENGI 218/219: Engineering Leadership Labs
   Syllabus for ENGI 241: Professional Excellence for Engineers
   Syllabus for ENGI 317: Leadership Action Learning
   Syllabi for ENGI 318/319: Engineering Leadership Labs
APPENDIX A-1

RCEL Certificate Competencies, Skills, and Components
## Personal Domain

<table>
<thead>
<tr>
<th>Competencies and Skills</th>
<th>Components</th>
</tr>
</thead>
</table>
| 1. **Developing self-awareness** – an ability to understand oneself and one’s aspirations and possibilities | • Has a practical understanding of “who I am” and “who I can become”  
• Knows personal strengths, constraints, and development opportunities  
• Develops self-confidence  
• Routinely seeks out and receives feedback from others  
• Builds emotional intelligence  
• Knows one’s basic needs, motivations, and values  
• Strengthens one’s ethical values and principles |
| 2. **Life-long learning** – an ability to take charge of, and manage, one’s personal growth and development | • Knows how to learn from practical experiences  
• Knows one’s tolerance for ambiguity and change  
• Develops professional expertise and capabilities  
• Manages one’s personal and career ambitions |
| 3. **Setting and achieving goals** – knowing how to set personal goals, allocate resources accordingly, monitor progress, and achieve results. | • Has a personal and professional vision  
• Sets SMART goals  
• Taking initiative  
• Plans, monitors, and manages goal achievement  
• Develops drive, perseverance, and resourcefulness in achieving goals  
• Achieves measurable results and learns from the process |
| 4. **Managing stress** – the ability to diagnose, cope with, and respond positively to stressors | • Diagnoses and identifies stressors in one’s life  
• Manages reactions to stressors  
• Manages time and commitments  
• Builds personal resiliency and hardiness  
• Develops and maintains life balance |
| 5. **Problem solving and decision making** – the ability to make effective decisions using rational and creative methods | • Being decisive  
• Defines problems, generates alternatives, evaluates alternatives, implements solutions  
• Practical ingenuity  
• Learns from problem solving experiences  
• Applies creative processes  
• Builds intuition and insight  
• Builds capacity for innovation |
## Interpersonal Domain

<table>
<thead>
<tr>
<th>Competency</th>
<th>Components</th>
</tr>
</thead>
</table>
| 6. Managing conflict and negotiation – The ability to experience and manage differences in constructive ways | • Diagnoses sources and foci of conflict  
• Manages emotions surrounding conflict  
• Values and learns from diversity  
• Understands one’s preferred conflict management style  
• Matches appropriate conflict management styles to conflict situation |
| 7. Building positive relationships – The ability to initiate, create, and maintain mutually satisfying and beneficial relationships and social ties | • Understands and builds one’s emotional intelligence  
• Understands mutual needs and concerns  
• Creates mutually satisfying and beneficial connections with others  
• Builds trust and credibility  
• Assesses current networks for personal and professional purposes  
• Builds and manages networks  
• Builds social intelligence |
| 8. Managing followership – Being a positive, productive, and sometimes outstanding individual contributor | • Assesses current commitments and allocates time and effort to make a positive and productive impact  
• Knows how to discover what is expected for strong results  
• Delivers outstanding results  
• Understands and manages interdependencies  
• Challenges the status quo, especially when it is the “right thing to do” |
| 9. Reputation management – Builds and manages one’s personal reputation | • Develops awareness of how one is perceived by others  
• Creates and manages one’s personal reputation |
| 10. Oral and written communication | • Communicates clearly, confidently, and persuasively in written, oral, and visual genres  
• Identifies and develops multimodal communication strategies appropriate for audience and purpose  
• Gathers, synthesizes, and analyzes information effectively to deploy powerful and focused arguments  
• Inquires, listens, accurately articulates, and responds productively to others |
## Management Domain

<table>
<thead>
<tr>
<th>Competency</th>
<th>Components</th>
</tr>
</thead>
</table>
| **11. Strategic management** — Creating and implementing a shared vision, goals, objectives, and plans for achieving these aspirations | - Defining purpose, goals, and strategies  
- Creates awareness of strategic context or environment (sensemaking)  
- Creates a shared vision and mission  
- Translates mission into goals, objectives, and measures of success  
- Creates plans to achieve goals and objectives  
- Communicates goals and feedback to guide collaboration and solve problems  
- Implements and updating plans to achieve desired results |
| **12. Organizing** — Designing and developing a structure to achieve desired results | - Create an overall structure of shared responsibilities and interrelationships  
- Create individual roles requirements, responsibilities, and expectations |
| **13. Staffing** — Assessing and selecting individuals for specific roles | - Recruiting and selecting individuals for roles  
- Assign people to roles based on interests and strengths |
| **14. Empowering and delegating** — Enabling others to have the authority, control, and voice in achieving shared objectives and making group decisions | - Diagnoses situations where empowerment or delegation is appropriate  
- Deploys strategies for enabling others to become empowered and confident in their roles  
- Uses delegation strategies appropriately in decision making situations  
- Group decision making |
| **15. Providing feedback** — The ability to deliver developmental feedback to others for coaching, counseling, and other purposes | - Develops a plan for delivering feedback  
- Delivers feedback that is descriptive, problem-oriented, actionable, and specific.  
- Communicates feedback in ways that are conversational, validating, and respectful.  
- Takes ownership of messages |
| **16. Teamwork** — Launching, managing, and adjourning temporary, project-based groups and teams | - Understands principles of project management  
- Deploys strategies to effectively compose and launch project teams  
- Deploys strategies to structure, measure, and monitor the work performed in projects  
- Deploys strategies for adjourning project teams and learning from team experiences  
- Managing diversity |
## Leadership Domain

<table>
<thead>
<tr>
<th>Competency</th>
<th>Components</th>
</tr>
</thead>
</table>
| 17. **Motivating and inspiring others** – Creating an environment that enhances the ability, motivation, and opportunities among members to achieve outstanding results | • Diagnoses performance problems  
• Deploys strategies for resolving performance problems  
• Creates a motivating work environment  
• Uses rewards and recognitions to motivate others  
• Uses discipline to improve poor performance  
• Designs jobs that are motivating  
• Communicating a clear and meaningful vision (sensegiving)  
• Uses rhetorical strategies to enhance charisma and/or the effectiveness of leader communications |
| 18. **Building power and using influence** – Understanding the existence and necessity of power and building power for ethical and shared purposes. The ability to gain others’ attention, commitment, and cooperation | • Diagnoses sources of personal and positional power  
• Manages one’s boss  
• Builds and manages personal sources of power  
• Manages positional sources of power  
• Knows how to covert power into influence  
• Diagnoses situations to select appropriate influence strategy  
• Knows how to influence upwards |
| 19. **Leading change** – Creating and implementing positive and lasting change | • Envisioning and articulating new possibilities  
• Engaging and aligning relationships  
• Executing planned change  
• Embedding lasting changes |
| 20. **Adapting leadership styles** – Using a repertoire of different leadership styles to meet the specific situational requirements | • Develops awareness of one’s natural or preferred leadership style  
• Selects behavioral strategies to meet specific situational needs (i.e., balancing a focus on relationships versus delivering results). |
| 21. **Creating cultures and identity** – Creating and maintaining shared values, practices, and identities | • Develops a meaningful and motivating shared identity  
• Identifies, selects, and reinforces shared values  
• Translates values into shared norms and routine practices  
• Knowing when to change versus preserve existing cultures |
APPENDIX A-2

Syllabus for ENGI 140: Engineering Leadership Development. Includes descriptions of Reflected Best Self Paper, Leadership Development Plans, and RCEL Portfolios
ENGI 140: Engineering Leadership Development
Fall 2014, CRN # 11903, W 3:00-4:59 p.m., DCC 113

Dr. David Niño: Abercrombie A108, 713.348.3912, davidnino@rice.edu
Office Hours: Monday, 10:00-12:00 p.m. Appointments can also be scheduled at other times.

Guest instructor: Dr. David Van Kleeck, Lecturer, Rice Center for Engineering Leadership

Readings

3. A reading packet is required and available through Harvard Business School Publishing. I will provide a URL through which these can be purchased directly from Harvard University.
4. Required readings will also be available through the Fondren Library’s electronic course reserves called ARES, see https://rice.ares.atlas-sys.com/ares/
5. Other readings may be available through our course website on Owlspace.

Course Overview

The purpose of this course is to prepare students to become future engineering leaders. Engineering leadership is an emerging innovation in both education and practice and our course will prepare students to begin their development journey toward this end. The course is also a front-end requirement for RCEL’s engineering leadership certificate and premised on the assumption that leadership is an honorable activity that can be learned.

Course Format

Our class is designed around multiple learning methods, including lectures and discussions, peer group learning, case studies, videos, presentations, guest speakers, role plays, and other experiential learning activities. The readings for the class include a combination of academic journal articles, practice-oriented articles, book chapters, videos, and other materials. Most of these readings review theories or practical actions that pertains to specific leadership topics.
Learning objectives and domains

- To formulate and articulate a personal point of view about what engineering leadership means and why it is important
- To begin to identify and assess the skills and motivations associated with effective leadership
- To demonstrate development of personal and interpersonal leadership skills and motivations
- To begin a multi-year plan for self-directed achievement of personal and professional goals

RCEL Competency Domains

<table>
<thead>
<tr>
<th>RCEL Competency Domains</th>
<th>Skills Learned in ENGI 140</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership</td>
<td>Leading positive change</td>
</tr>
<tr>
<td>Management</td>
<td>Communicating a vision</td>
</tr>
<tr>
<td>Interpersonal</td>
<td>Managing oneself</td>
</tr>
<tr>
<td>Personal</td>
<td>Building relationships</td>
</tr>
<tr>
<td></td>
<td>Giving and receiving feedback</td>
</tr>
<tr>
<td></td>
<td>Building emotional intelligence</td>
</tr>
<tr>
<td></td>
<td>Acting on courage and wisdom</td>
</tr>
<tr>
<td></td>
<td>Developing sources of power</td>
</tr>
<tr>
<td></td>
<td>Exercising influence</td>
</tr>
<tr>
<td></td>
<td>Adaptive learning styles</td>
</tr>
<tr>
<td></td>
<td>Analytical problem solving</td>
</tr>
<tr>
<td></td>
<td>Setting and achieving goals</td>
</tr>
<tr>
<td></td>
<td>Managing stress</td>
</tr>
<tr>
<td></td>
<td>Developing personal skills</td>
</tr>
</tbody>
</table>

Grading

- 25% Reflected Best Self paper
- 20% Individual class participation
- 20% Exams
- 20% Assessments, Leadership Development Plan, and Portfolio
- 15% Interviews with engineering leaders

Reflected Best-self Paper

One of the most important attributes of a successful leader is self-knowledge. The purpose of this exercise and paper is to enable you to learn more about your own unique strengths as a potential leader (and leader). Based on the self-assessments we will complete throughout the semester and on targeted feedback from others, you will discover some of the talents, competencies, and principles that define who you are and the kind of leader that you can become. This paper will require a considerable amount of self-exploration on your part, but in my experience, the results can become one of the most valued learning outcomes of this class.

Complete instructions on the content and format for this paper will be provided in class. The exercise is also described, in part, in Chapter 10 of the Whetten and Cameron textbook. The overall content of the paper will be developed throughout the semester via hand-in papers and peer group discussions (explained more below). The final, complete version of the paper is due on the last class day, as noted on the syllabus. Late papers will not be accepted.
Individual Class Participation

Students will be expected to actively contribute to class discussions for several reasons. First, we will utilize case studies and other methods of active learning that depend on class discussions. Second, your ability to effectively express your ideas is essential to leadership and finally (and most importantly), everyone learns more through active engagement.

Class participation grades are based on attendance, contributions to class discussions, hand-in papers, and engagement in peer group learning. Students that miss no more than one class will receive full credit for the “attendance” part of their class participation grade. Each absence after the first will result in a reduction on the attendance part of this grade.

The quality of in-class contributions will be based on the following:

- **Accuracy**: comments are informed by the assigned readings.
- **Relevance**: comments contribute meaningfully to the flow of the discussion.
- **Creativity**: comments reflect original perspectives that stimulate further discussion.
- **Judiciousness**: comments are well reasoned, persuasive, and moderated (i.e. frequency is neither too high nor too low).

In order to make sure that we hear from everyone in class, I will occasionally call on students throughout the semester.

Many of the class sessions will be structured in small group discussions that focus on specific leadership development topics, all of which align with the Reflected Best Self paper. Everyone will engage in these groups with rotating responsibility for discussion leadership. Faculty will assign these groups early in the semester and more guidelines will be provided about the scope and process for these discussions.

Discussion topics are noted on the schedule and each will coincide with a “hand-in” paper, which is a short essay that addresses the specific leadership development topic for that day. More information on these hand-in papers will be provided later.

Exams

There will be two exams consisting of 50 multiple-choice, true/false questions, and short answer questions. Both will be based on readings, lectures, and class discussions. The first will be administered online and the second will be held in person during the scheduled period for the final exam. I will provide study guides for both exams and students can use one page of notes for each.

Make-up exams will be administered only under circumstances involving serious and documented illnesses, university-excused absences, a death in immediate family, or other major event of comparable seriousness. If such an event occurs, students must inform me immediately to coordinate a make-up. Documentation will be required.
Assessment, Leadership Development Plan, and Portfolio

Many of the skills and other personal attributes learned in this course can be measured. The assessments located at the beginning of each textbook chapter will be used to measure these leadership attributes. Other assessments will be provided either on paper or via online surveys and instructions on submitting the results of these assessments will be discussed in class. Completion of all of these assessments is required for the class and worth 5% of this component of your grade.

The results of assessments can be used for many developmental purposes, including the creation of the Leadership Development Plan. The RCEL Leadership Development Plan and Portfolio will begin in this class and evolve throughout the RCEL certificate experience. Both of these activities will become extensions of insights gained from the Reflected Best-Self Paper.

The purpose of Leadership Development Plan is to synthesize the main learning outcomes of the best-self paper into concrete, actionable, and measureable “next steps” in your development. This two-page (single-spaced) plan will be worth 10% of this component of your grade and evaluation will be on a credit/no credit basis (i.e., v, v+ or v-). A more detailed outline of the specific content and format will be provided in class.

The purpose of the RCEL Portfolio is to synthesize and organize the activities, achievements, and experiences that have contributed meaningfully to your leadership development. Like the leadership plan, this Portfolio will become your “first draft” of a deliverable that will evolve over the course of the certificate. The Portfolio will be worth 5% of this component of your grade and evaluation will be on a credit/no credit basis (i.e., v, v+ or v-). A more detailed outline of the specific content and format will be provided in class.

Interviews with Engineering Leaders

During this semester, students will pair up to interview at least two engineering leaders of your choice. Examples may include engineering project leaders, leading technical experts, entrepreneurs who are engineers, or other leaders that are trained engineers. If you have any doubts about whether an interviewee will qualify for this assignment, please let me know prior to conducting the interview. The paper should be a five-page (maximum), double-spaced summary of the insights you gained from the interviews.

The purpose of these interviews is to provide students with the opportunity to learn about how course concepts and other materials relate to the real world of leaders in engineering or other contexts. It is also intended for students to explore what differentiates an engineer from an engineering leader. I will provide more specific details on this assignment during class.

Class Norms

• Open debates and disagreements about ideas are encouraged.
• Do not engage in distracting side conversations while others are talking.
• Turn off cellular phones before class begins.
• Use laptops only for taking notes; otherwise they should remain closed.
• Raise your hand before speaking.
• When emailing me, please include ENGI 140 in the subject line
General Course Expectations

**Preparation**  
Plan to come to class having read the readings for the day and prepared to contribute to class discussions.

**Proactivity**  
We encourage students to be proactive in both planning and working. If you are experiencing - or anticipate experiencing - any problems, difficulties, or uncertainties, then let us know ASAP.

**Punctuality**  
Plan to come to class *on time* and complete all assignments *on time*.

**Personal Responsibility**  
We expect all students to take responsibility for their learning, course obligations, and commitment to academic honesty.

**Rice Honor Code**

Students are responsible for maintaining the highest standards of honesty and integrity in their work and conduct. Students should be familiar with what constitutes plagiarism and always cite proper references of outside materials. Students should abide by the honor pledge they made upon entering Rice and include the following statement on all submitted assignments; “On my honor, I have neither given nor received any unauthorized aid on this (paper or exam)”.

**Special Needs**

Let us know during the first few weeks of the semester if you have disability needs and we will do what we can to accommodate these needs. Students with disabilities should contact Rice Disability Support Services at 713.348.5841 or [http://dss.rice.edu](http://dss.rice.edu).

**Schedule, Topics, and Activities**

*Syllabus may change slightly to accommodate unplanned opportunities or circumstances.*

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic and Readings</th>
<th>Class Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>8/27</td>
<td><strong>Introduction to class</strong></td>
<td>• Course overview and introductions</td>
</tr>
</tbody>
</table>
| 9/3  | **Aspirations of engineering leadership**  
Available for free online [http://books.nap.edu/catalog.php?record_id=10999](http://books.nap.edu/catalog.php?record_id=10999) | • Discuss readings  
• Group activity on creating and communicating a vision |
## Schedule, Topics, and Activities

_Syllabus may change slightly to accommodate unplanned opportunities or circumstances._

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Readings</th>
<th>Activities</th>
</tr>
</thead>
</table>
  • In-class exercises  
  • **Leaders in Focus** – Bill Gates and Steve Jobs  
  • Introduce Reflected Best Self (RBS) paper assignment  
  • Review methods for discovering strengths; W&C – Chapter 10, Reflected Best Self, pp. 535-536, 548-550 |
| 9/17  | **Learning and performing: Cognitive styles, performance styles, and personality** | Whetten and Cameron (W&C) – Chapter 1, Developing Self Awareness  
  • **RBS Essay Due** – How I learn and how I perform  
  • Complete selected assessments from Chapter 1 and bring the results to class  
  • Bring results of the IPIP-NEO personality assessment to class |
| 9/24  | **Building self-confidence: Locus of control, self-confidence, core self-evaluation, and tolerance for ambiguity** | W&C – Chapter 1, Developing Self Awareness  
W&C – Chapter 2, Managing personal stress | • Discuss readings and individual essays  
  • **RBS Essay Due** – Defining events in my life and how I learned from them  
  • Complete selected assessments from Chapter 1 and bring the results to class |
Schedule, Topics, and Activities (cont.)

Syllabus may change slightly to accommodate unplanned opportunities or circumstances.

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic and Readings</th>
<th>Class Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/1</td>
<td>Building character: Values, principles, and character strengths</td>
<td>• Discuss readings and individual essays</td>
</tr>
<tr>
<td></td>
<td>W&amp;C – Chapter 1, Developing Self Awareness</td>
<td>• <strong>RBS Essay Due</strong> – My values, principles, and character strengths</td>
</tr>
<tr>
<td></td>
<td>W&amp;C – Chapter 2, Managing personal stress</td>
<td>• Complete selected assessments from Chapter 1 and bring the results to class</td>
</tr>
<tr>
<td></td>
<td>Nansook Park, Christopher Peterson, and Martin E. P. Seligman (2004) Strengths of</td>
<td>• <strong>First exam posted this week</strong></td>
</tr>
<tr>
<td>10/8</td>
<td><strong>Acting ethically by drawing on courage and wisdom</strong></td>
<td>• Discuss readings</td>
</tr>
<tr>
<td></td>
<td>W&amp;C – Chapter 2, Managing personal stress</td>
<td>• Complete assessments to Chapter 2 and bring the results to class</td>
</tr>
<tr>
<td></td>
<td>Janice M. Beyer and David Niño (1998). Facing the future: Backing courage with</td>
<td>• <strong>Skill practice</strong>: Martha McCaskey</td>
</tr>
<tr>
<td></td>
<td>wisdom. In S. Srivastva and D.L. Cooperider (Eds.) *Organizational Wisdom and</td>
<td></td>
</tr>
<tr>
<td>10/15</td>
<td><strong>Discovering your strengths and motivations</strong></td>
<td>• Discuss readings</td>
</tr>
<tr>
<td></td>
<td>W&amp;C – Chapter 6, Personal needs and motivations.</td>
<td>• Bring feedback (stories) from RBS responses to class</td>
</tr>
<tr>
<td></td>
<td>Boas Shamir and Galit Eilam (2005) “What’s your story?” A life-stories approach to</td>
<td>• Complete online assessments and bring the results to class</td>
</tr>
<tr>
<td></td>
<td>authentic leadership development. <em>The Leadership Quarterly.</em></td>
<td>• Discuss full parameters of the RBS paper</td>
</tr>
<tr>
<td>10/22</td>
<td><strong>Analytical problem solving</strong></td>
<td>• Complete assessments to Chapter 3 and bring the results to class</td>
</tr>
<tr>
<td></td>
<td>W&amp;C – Chapter 3, Solving problems analytically</td>
<td>• <strong>Skill practice</strong>: In Harm’s Way article</td>
</tr>
<tr>
<td></td>
<td>Dina Cappiello (2005) In Harm’s Way. The Houston Chronicle</td>
<td>• Discuss Leadership Development Plans and Portfolios</td>
</tr>
</tbody>
</table>
## Schedule, Topics, and Activities (cont.)

*Syllabus may change slightly to accommodate unplanned opportunities or circumstances.*

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic and Readings</th>
<th>Class Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/29</td>
<td>Emotional intelligence and relationships</td>
<td>• Discuss readings and individual essays</td>
</tr>
<tr>
<td></td>
<td>W&amp;C – Chapter 1, Emotional intelligence</td>
<td>• Complete assessments to Chapters 1 and bring copies of results</td>
</tr>
<tr>
<td>11/5</td>
<td>Delivering constructive feedback</td>
<td>• Discuss readings</td>
</tr>
<tr>
<td></td>
<td>W&amp;C – Chapter 4, Giving and receiving feedback</td>
<td>• Complete assessments to Chapters 4 and bring the results to class</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• <strong>Skill practice:</strong> Karen Leary</td>
</tr>
<tr>
<td>11/12</td>
<td>Building power and using Influence</td>
<td>• Discuss readings</td>
</tr>
<tr>
<td></td>
<td>W&amp;C – Chapter 5, Gaining power and influence</td>
<td>• Complete assessments to Chapter 5 and bring the results to class</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• <strong>Skill practice:</strong> Jonah Creighton</td>
</tr>
<tr>
<td>11/19</td>
<td>Using influence strategies; Reflections on interviews</td>
<td>• Complete assessments to Chapter 5 and bring the results to class</td>
</tr>
<tr>
<td></td>
<td>W&amp;C – Chapter 5, Gaining power and influence</td>
<td>• Practice influence styles</td>
</tr>
<tr>
<td></td>
<td>Share results of lessons learned from interviews with engineers about careers in engineering</td>
<td>• <strong>Interviews with engineering leaders due today</strong></td>
</tr>
<tr>
<td>11/26</td>
<td>Online learning: An engineering leader’s story of purpose, strength, and relationships</td>
<td>• Online discussion about high quality connections and expressing meaningfulness in what we do.</td>
</tr>
<tr>
<td></td>
<td>View engineering professor Randy Pausch’s “Last Lecture” at <a href="http://www.cmu.edu/randyslecture/">http://www.cmu.edu/randyslecture/</a></td>
<td></td>
</tr>
<tr>
<td>12/3</td>
<td>Last Day</td>
<td>• Reflected Best Self Paper due</td>
</tr>
<tr>
<td></td>
<td>Review for final exam</td>
<td>• Leadership Development Plan and Portfolio due</td>
</tr>
<tr>
<td></td>
<td>Summarize and synthesize class experiences</td>
<td></td>
</tr>
</tbody>
</table>
ENGI 140: Guidelines for the Reflected Best-Self Assignment and Paper

This assignment is intended to help you develop greater self-knowledge in your distinctive capabilities as a leader, a potential leader, and follower. The instructions below will help you solicit the feedback needed for the assignment and complete a reflected best-self paper.

Instructions

Step One: Solicit feedback for this assignment

1. Identify 15-20 people who know you well and who will provide honest and meaningful feedback about your past experiences. These may be family, friends, mentors, teachers, or anyone you have interacted with for an extended period of time. Aim for many different types of respondents (i.e., not just friends and family) but be sure to include people with whom you have interacted for many years.

2. Email each person a request for feedback about your strengths, using a format similar to the sample below. While requesting such feedback may seem awkward at first, people are usually more than willing to provide this information. After all, you are asking for positive testimonials from your past, not critical ones. You will need at least 10 respondents to complete this assignment. As a general rule however, the more feedback you get, the better.

   Sample Request
   I am attending a class this semester and would appreciate your assistance on one of my assignments. This involves my contacting a few people who know me well enough to share specific experiences from my past. I am inviting you to become part of this assignment. Here is what I need: Please reflect on our past experiences and describe up to three situations where you saw me perform at my very best. It doesn’t matter how large or small these events were; the main requirement is that you see them as meaningful expressions of my personal strengths. In your feedback, describe these experiences in enough detail that I can understand the circumstances, what I did, and any relevant outcomes. An example is provided below, but consider this example as only as a guide in terms of style and format.

   Please email these responses back to me by September 30, 2014. Thank you very much for helping with this assignment and I will be back in touch with you after I complete the assignment.
**Example**

**One of your strengths** is: Your ability to motivate people to work well together.

**For example, I think of the time...**

When we were falling behind schedule on the software implementation project, the stress was building within the group, and the quality of our work was beginning to suffer. You noticed that we were not doing our best work and challenged the group to rethink our approach. You reminded us of what we were capable of doing if we worked more together and this caused all of us to pause. No one else would have thought to intervene like you did and it made a real difference. In the end, we were all very proud of what we accomplished together and you played a big part in us getting there.

**Step Two: Analyze the Feedback**

Compile all of the individual stories into one document and analyze them for insights into your natural talents, skills, and personal values. You might create a table such as the one below where you can begin to compile categories of your specific strengths along with supporting examples. In the “Insights” section, try to develop a deeper understanding of specific examples of strengths; what it is, where it came from (born or learned), what it means to you, why it is meaningful, how it might help you in the future, etc... Here is an example, using the feedback from above:

<table>
<thead>
<tr>
<th>Talent, Skills, or Values</th>
<th>Example</th>
<th>Insights</th>
</tr>
</thead>
</table>
| Natural ability to keep calm when others are stressed. | Software project: We were all behind and some in the group were stressing out. | - This seems to be a personality trait, as I have always worked well under pressure.  
- As a leadership quality, this could help in crisis situations. |
| A lack of fear in speaking up when other won’t. | Software project: Someone needed to call everyone out on the sloppy work we were doing. | - This is a skill I’ve practiced and learned over time, especially in my debate team and at home.  
- I once read a paper on courage and will now learn more about it. |
| I value good working relationships. | Software project: How I helped us come together when we were beginning to split apart. | - I thrive when people are all getting along and working well together.  
- This seems to come natural to me. |
ENGI 140: Guidelines for the Reflected Best Self Paper

Once the Reflected Best Self feedback has been gathered and analyzed, write this paper to integrate and explain your core insights. The paper should be written, labeled, and organized as described below. You can be as creative as you want in preparing the paper (especially the self-portrait), just make sure that the content of the paper meets all of the minimum requirements outlined below. Keep in mind that this may be the only paper of its kind that you will ever write in your life and about your life.

- **A Best-Self Portrait.** The key questions addressed here are “Who have I been, who am I now, and who can I become, and why?” While this is the first part of your paper, it should be completed last, as it summarizes the entire paper.
  - This narrative and self-portrait should integrate insights from all of the sources of information you used for this assignment. It should also synthesize key insights from all of the other sections of the paper outlined below.

- **My values and principles.** In this section, explicate the personal values and principles that you discovered in your analysis of the feedback, from your own reflections, and from other sources listed below. There is a difference between the values and principles that we hope to live by and those that we actually live by. Aim to discover and articulate the latter; those that shape our actions and aspirations.
  - **The feedback that you received from others** for this assignment should become the primary source of information for discovering your values and principles, which should be few in number (see Drucker, 2005). The other assessments below should be used to build on and compliment your qualitative analysis of the feedback. General questions to consider are
    - What are my personal values and why and how are they core to who I am?
    - What can I do to strengthen my values?
  - **Use assessments in Whetten and Cameron (2011) Chapters 1 and 2 for this assignment.**
    - Use the assessments in Chapter 1 to discover your values (the defining issues test and one that I will hand out in class). Address the question: What is my level of moral judgment development and what can I do to strengthen my moral judgment? What are my instrumental and terminal values and why are they important?
    - Use the questions and exercises in Chapter 2 to identify your statements of personal principles. Examples to consider are
      - What do I stand for? What am I willing to fight or make major sacrifices for? What do I care passionately about? What legacy would I like to leave? What do I want to be remembered for? What do I want to have accomplished 20 years from now?
    - Complete the “VIA Survey of Character Strengths” at the University of Pennsylvania - [http://www.authentichappiness.sas.upenn.edu/Default.aspx](http://www.authentichappiness.sas.upenn.edu/Default.aspx)
      - This is a university-based, scientifically validated survey of personal values and character virtues. The data resulting from this assessment can be an excellent way to validate (or triangulate) some of findings from the qualitative analysis of your RBS feedback. If interested, you can learn more about character strengths and the research behind the assessment in the following article: Nansook Park, Christopher Peterson, and Martin E. P. Seligman (2004) Strengths of Character...

- **Personal Vision and/or Purpose.** The exercises in the last section should flow into this section. This part of the paper should not be viewed as a static set of statements but instead, something that may evolve and develop over time. Some issues to consider are your personal and professional ambitions, your hopes and dreams, your extrinsic and intrinsic motivations, your values and principles, and your commitments to others. While this exercise points to the “person that I aspire to become”, some have found it useful to also consider “the person that I want to avoid becoming”. As much as possible, try to link or align the remaining sections of the paper to this statement of vision and/or purpose.

- **Stress management and life balance.** This section should flow naturally from those above. In this section, provide a personal analysis of the results of the skills assessments from Chapter 2 and how you can use this data to improve your ability to manage stress. Specific issues to address include:
  - How do you tend to react and cope in stressful situations? Draw on specific examples of your past – examples that resulted in positive growth and examples that resulted in more negative outcomes.
  - What kinds of stressors have you encountered and how have you managed them? In future situation, what specific practices can you learn to better manage these sources of stress?
  - What can you do to strengthen your physical, psychological, and social resiliency?
  - Complete the “Life-Balance Analysis” on pp. 156-158 and develop an action plan for achieving greater life balance.

- **Life defining events.** This section should describe the events that you believe have had the greatest impact on your personal development and overall sense of “Who I am today”. Consider the Ligon, Hunter, and Mumford (2008, esp. Table 2) reading on the kinds of early events and experiences that have shaped some of history’s most outstanding leaders. Consider also Chapter 2’s discussion of developing “hardiness” and the McCall (2010) article on learning from experience.
  - What specific events or experiences have had the greatest impact on your development? What were the important circumstance surrounding the experience and what did you learn about yourself?
  - Related to above, how did you learn from these experiences? What were the roles of others in this learning process?
  - What implications do these experiences have on the kind of leader you are or can become?

- **My level of self-awareness and how I receive feedback from others.** In this section, provide brief explanations of the key insights and growth opportunities relating to Chapters 1/4 and questions from Drucker (2005). Key issues include:
  - How do I develop self-awareness, especially from others? What is my “sensitive line” and under what conditions do I tend to self-disclose to others?

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• What are the most valuable instances where I receive developmental feedback from others? Under what kinds of conditions do I respond negatively to receiving feedback from others (i.e., defensiveness or disconfirmation)? Think of specific examples.

• What is my cognitive style and how does this shape how I learn and achieve? Consider also Drucker’s (2005) analysis of cognitive styles and how they impact performance?

• What are my attitudes toward change?

• What is my core self-evaluation and general level of self-confidence?

• What are the developmental implications of the answers to the questions above?

• **My distinctive strengths and enablers.** This section should build on the results of your analysis of the Reflected Best-Self (RBS) feedback. It should also incorporate the results of some of the skill assessments that you completed from Whetten and Cameron (2011). In this section, you should explicate the contextual factors that tend to facilitate your ability to perform at your best. These insights should emerge from your analysis of the RBS feedback, as well as your own reflections on past achievements, failures, or shortcomings. Specific issues to address here include:
  
  • What are my unique skills, talents, and abilities that enable me to achieve my highest levels of performance and most valued achievements?
  
  • How did you develop these abilities?
  
  • What contextual enablers most positively impact your best performance? These can be related to people (friends, family, co-workers, mentors, etc...), organizations (i.e. work, school, church, clubs, etc...), living arrangements, finances, or any other factors associated with your life situation?
  
  • Following Drucker’s (2005) advice, what can you do to further develop these strengths?

• **Blockers of my best performance.** In this section, explicate the personal and contextual factors that tend to hinder your ability to perform at your best. You might also consider skill assessments from Whetten and Cameron that point to low levels of competency. Personal and contextual blockers are similar in source as enablers but these have the opposite effect – they get in the way of, hinder, or limit, your ability to perform at your best. These may include personal factors such as bad habits, lack of motivation, overconfidence, bad manners, lack of discipline or focus, etc... They may also include contextual factors such as certain relationships, certain assignments or roles, finances, living circumstances, etc...
  
  • What are the developmental implications of your analysis in this section?

• **My leadership motivation and style.** Draw from reading by Shamir and Eilam (What’s my story) and the motivation to lead assessment to gain insights into your motivation to lead. To identify your leadership style consider the results of your assessments of skills in communicating feedback (Chapter 4), motivating others (Chapter 6), power and influence (Chapter 5), conflict management (Chapter 7), and delegation and empowerment (Chapter 8) to address this question. Specific issues to address here include:
  
  • Why is leadership something that interests me and what are my motivations to lead?
  
  • Who are your professional, personal, and leadership role models? Why did you choose these individuals and how do they impact how you see yourself?
  
  • What is my natural and most comfortable leadership style and how will you strengthen this style?
• What are my least comfortable leadership styles and how might this impact my future performance as a leader?
• What are the developmental implications of your analysis in this section?

• Your relationships and networks. In this section, reflect on Ibarra and Hunter (2007) and Drucker (2005, pp. 8-9) and describe the role that relationships play in your life and how you manage these relationships. These may include how you manage your relationships with family, friends, mentors, co-workers, supervisors, followers, as well as more difficult relationships such as adversaries, competitors, or opponents. Specific issues to address include:
  • How have you developed and how do you manage your operational, personal, and strategic networks? Who are your mentors, coaches, and others who contribute positively to your growth and development?
  • What individuals have helped you most in your life and how? What do these specific experiences and relationships tell you about how you learn and develop? Have you expressed your appreciation and gratitude to these people?
  • Who are your mentors? How they did end up as mentors, what do you learn from them, and how are you engaging with them?
  • What individuals have tried, unsuccessfully, to help you in the past? What can you learn from these specific experiences?
  • What new relationships do you need to form to enhance your development?
  • What old relationships do you need to draw back to enhance your development?

• My career aspirations and how I will get there. In this section, speculate about your career aspirations and what you need to do to achieve them. Consider also some of the key questions raised by Drucker (2005) about the kinds of organizations that bring out your best capabilities. Specific issues to address here include:
  • Do you have a sense of “calling” in your future aspirations or motivations?
  • What kind of career do I want to develop after Rice? Why?
  • How does this career align with my values, strengths, and other skills outlined above?
  • What kind of organization do I want to work for to begin this career?
  • What do I know about this profession and what do I need to learn?
  • What relationship do I have in this profession and what relationships do I need to form?
  • What kinds of internships do I need to best prepare me for this profession?
  • What are the developmental implications to the answers above?

• Appendices. This section should include any additional information that was relevant to the paper. At minimum, it should include copies of the RBS communications that were the source of feedback obtained from others for this paper (i.e. the e-mails soliciting feedback).

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Guidelines for the RCEL Engineering Leadership Development Plan

The Leadership Development Plan will be used as a tool for planning, measuring, and demonstrating your personal development throughout the certificate experience. This plan will also be used for coaching throughout the RCEL certificate experience and we hope it may also provide a foundation for post-Rice planning and development.

The deliverable for ENGI 140 should be a two-page summary of the requirements below and draw heavily from the Reflected Best Self (RBS) Paper. Grading for this deliverable is explained in the syllabus.

Required components

1. Short statements describing how you see yourself now (Who I am) and who you see yourself becoming (Who I want to become) over a specific period of time.
   A. This should include insights drawn from the RBS paper.
   B. Do you have a role model?
2. Explication of core values and ethical principles. Again, the entire leadership development plan should align with these insights.
3. Short-term goals. Create short-term personal development goals that align with methods described in our text (see Whetten and Cameron, 2011, pp. 132-133 and pp. 453-454). Focal area should include
   A. Personal competencies. Choose one or two skills from the RCEL certificate framework (next page) that you want to develop and explain why development in this area interests you. Explicate the
      • specific behaviors that you would like to become better at using.
      • projects and/or action steps you will take to develop this skill.
      • accountability and reporting mechanisms.
      • measures of skill development.
      • criteria for success and a reward.
   B. Interpersonal competencies. Choose one or two skills, outlining the same format.
   C. Management competencies. Choose one or two skills, outlining the same format
   D. Leadership competencies. Choose one or two skills, outlining the same format
   E. Career development – Create one or two short term goals that relate to achieving your career aspirations.
   F. Other – Are there other areas in which you would like to develop?
Guidelines for the RCEL Engineering Leadership Portfolio

The leadership portfolio will be used as a tool to synthesize leadership and followership-related learning experiences. These portfolios will catalog the processes, positions, or experiences that shape your personal leadership development. The example below provides an illustration of the types of simple summaries that will codify these experiences into a leadership portfolio.

Academic Year 2013 (Each year must be represented)

Courses:

ENGI 120: Introduction to Engineering Design
ENGI 140: Introduction to Engineering Leadership

Organizations:

OwlSpark
Engineers without Borders USA

Workshops/Conferences:

Society for Professional Engineers National Conference
FAB Shops

Influential Readings:


Engineering Projects and Competitions:

Rice Undergraduate Venture Challenge
Solar Car Competition

RCEL Program Events:

Leadership Reaction Course
Impact labs
**Patents and Publications:**

Filed for a patent # ____

**Failures or Hardships:**

Struggling in a leadership or followership role as...

Deciding to change majors from...

**Notable Successes:**

Selected for a ____ scholarship

**Other:**
Appendix A-3

Syllabus for ENGI 315: Leading Teams and Innovation
ENGI 315: Leading Teams and Innovation
Fall 2014, CRN #11281, TR 2:30-3:45 p.m., BRK 103

Dr. David Niño: Abercrombie A108, 713.348.3912, davidnino@rice.edu
Office Hours: Monday, 10:00-12:00 p.m. Appointments can also be scheduled at other times.

Guest instructor: Dr. David Van Kleeck, Lecturer, Rice Center for Engineering Leadership

Readings

2. A digital reading packet is required and purchased through Harvard University. A link for this packet will be emailed to the class during the first week of class.
3. Required readings are also available through the Fondren Library’s electronic course reserves called ARES, see https://rice.ares.atlas-sys.com/ares/
4. Other readings may be posted on Owlspace.

Course Overview

The purpose of this course is to prepare students for engineering leadership and followership roles within creative and other forms of teams. Topic will focus on leadership, teamwork, and innovation in engineering contexts. This course is required for our school’s certificate in engineering leadership and includes a focus on practical skills and how these skills can be learned, developed, and applied in team situations.

The learning objectives are

1. To formulate and articulate a personal point of view about what it means to be in a high performing team.
2. To identify, assess, and develop the skills needed to be an effective team leader in engineering environments.
3. To identify, assess, and develop the skills needed to be an effective team member in engineering environments.
4. To apply skills and abilities for enabling creativity and innovation in engineering teams.
Course Format

One of the best ways to learn to lead is through the experience of actually leading. These real-life experiences build the kind of practical wisdom that is difficult to acquire in the classroom. What we can do in the classroom, however, is learn about the strategies, mind-sets, and skills related to effective team leadership and practice applying them in class assignments.

Our class is designed around multiple learning methods, including lectures and discussions, case studies, videos, presentations, guest speakers, role plays, and other experiential learning activities. We may organize one optional field trip during the semester.

The conceptual readings for the class include a combination of academic journal articles, practice-oriented articles, books and book chapters, and other readings. Most of these readings review theories or practical actions that pertain to specific topics.

Grading

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>20%</td>
<td>Exams</td>
</tr>
<tr>
<td>15%</td>
<td>Individual vision presentation</td>
</tr>
<tr>
<td>15%</td>
<td>Assessments and Leadership Development Planning</td>
</tr>
<tr>
<td>10%</td>
<td>Class participation</td>
</tr>
<tr>
<td>10%</td>
<td>Group case analyses</td>
</tr>
<tr>
<td>15%</td>
<td>Group innovation project</td>
</tr>
<tr>
<td>15%</td>
<td>Group team building project</td>
</tr>
</tbody>
</table>

Exams

There will be two exams consisting of 50 multiple-choice, true/false questions, and short answer questions. Both will be based on readings, lectures, and class discussions. The first will be administered online and the second will be held in person during the scheduled period for the final exam. I will provide study guides for both exams and students can use one page of notes for each.

Make-up exams will be administered only under circumstances involving serious and documented illnesses, university-excused absences, a death in immediate family, or other major event of comparable seriousness. If such an event occurs, students must inform me immediately to coordinate a make-up. Documentation will be required.
**Individual Presentation: Communicating a compelling team vision**

One of the most important skills of team leaders, especially in engineering, is the ability to create and effectively communicate a meaningful sense of vision and purpose for a team. The purpose of this assignment is to practice and develop this important skill. All students will create and deliver a “team vision” based on circumstances described in the Erik Peterson case. The main deliverable for this assignment is an 8-10 minute presentation of a personally created team vision. We will record these presentations and post them for review and feedback from peers and faculty. More details on this project will be provided later.

**Assessments and Leadership Development Planning**

Many of the skills and other personal attributes learned in this course can be measured. The assessments located at the beginning of each textbook chapter will be used to measure these leadership attributes. Other assessments will be provided either on paper or via online surveys and instructions on submitting the results of these assessments will be discussed in class. Completion of all of these assessments is required for the class.

The results of assessments can be used for many developmental purposes, including pointing out areas of potential development. The purpose of Leadership Development Plan is to synthesize the main learning outcomes from the course into concrete “next steps” in your development journey. This three page (single-spaced) plan will be evaluated on a credit/no credit basis (i.e., √, √+ or √-) and due on the last day of class. A more detailed outline of the specific requirements will be provided in class.

**Individual Class Participation**

Students will be expected to actively contribute to class discussions for several reasons. First, we will utilize case studies, role plays, and other learning methods that rest on active participation. Second, your ability to effectively express ideas is essential to leadership. Finally, and perhaps most importantly, everyone in the class will learn more from one another through active engagement in class discussions.

Class participation grades are based on participation, attendance, and results of peer evaluations. Students that miss no more than one class will receive full credit for the “attendance” part of their class participation grade. Each absence after the first will result in a reduction on the attendance part of this grade. Participation will be based on a combination of quantity and quality. Participation quality will be determined by the following criteria:

- **Accuracy**: comments are informed by the assigned readings.
- **Relevance**: comments contribute meaningfully to the flow of the discussion.
- **Creativity**: comments reflect original perspectives that stimulate further discussion.
- **Judiciousness**: comments are well reasoned, persuasive, and moderated (i.e. frequency is neither too high nor too low).

In order to make sure that we hear from everyone in class, I will occasionally call on students throughout the semester. The final component of the individual participation grade relates to the results of a peer evaluation and feedback following the two major group projects.
Case Analyses (completed in dyads)

The purpose of case analyses is to enable students develop an understanding of how to use course materials to understand and solve real team leadership challenges. Self-selected dyads will form and prepare two written case analyses, which will be based on thoughtful and thorough responses to discussion questions assigned for that case (questions will be posted). These questions will enable you to integrate and synthesize the conceptual and practical materials in ways that provide insight into the experience of leading teams. During the first few weeks, students will pair up and sign up for cases. Additional information on these papers will be provided in class.

Each written analysis is due at the beginning of class on the date that the case will be discussed. A copy of the papers should also be uploaded to our OwlSpace Drop Box. Late papers will not be accepted. The paper format should include a cover page (with title, course, names and date) and a three-page (maximum) analysis. It should be single-spaced, paginated, and clearly organized, using 1.25-inch margins and 12-pt. Times New Roman font, and stapled.

Project on Team Building (completed in small groups)

Teambuilding is a set of skills that enables important team outcomes such as positive relationships, creative thinking, and team development. The purpose of this assignment is to learn how to select, plan, and practice delivering a team building exercise. Groups formed by the instructor early in the semester will come together to select and implement one team building activity in class. The deliverable for this assignment is a three-page (single spaced) set of instructions for the exercise and a 10-15 minute (maximum) delivery in class. There are many resources in books and on the web to draw from for this fun and playful assignment. One of my main requirements is that the learning experience points to outcomes that are clearly aligned with the class (focusing on teamwork, creativity, leadership, innovation, etc...). Each group must submit a brief proposal for your team building activity and I highly encourage groups to practice on others before delivering the event in class. Details on this project will be provided later.

Project on Innovations (completed in small groups)

The purpose of this assignment is to enable groups to apply course materials to understanding engineering innovations of their own interest. Groups formed by the instructor early in the semester will form and focus on evaluating one significant engineering innovation. Groups will describe, in “case study” format, its development from inception through implementation. This five page paper (single-spaced) and 10-minute presentation (maximum) must align clearly with the course materials on both creativity and leadership of teams. Papers will be due on the date of the presentations noted on the syllabus. Presentations and papers should address questions such as; how is this an example of an engineering innovation, how did its creators come up with the original idea, how did various people work together to develop and implement the idea, why it is valued by others as a sustainable innovation. Grades will be based on evaluations of the presentations and the paper. Each group must submit a brief proposal for your innovation and more details on this group project will be provided later.
Extra Credit Options

These extra credit options may be worth up to 10 extra credit points toward a student’s cumulative exam grade. These five-page papers will be due at the beginning of the last class day (noted on the syllabus). All extra credit projects need to be discussed with me beforehand and I will consider group projects for this deliverable. Here are the two options:

- Case study of engineering leadership - Write a paper on key developmental events in an engineering leader’s career during the ten-fifteen years immediately after college. If they did not go to college, then focus your case study on their lives between the ages of 20-35. The purpose of this assignment is to gain an understanding of how the years immediately following college influenced (positively or negatively) the development of an engineering leader’s career. The cases should be similar to those we are reviewing for our class assignments and I can provide more information on writing cases for those interested.

- Interviews with creative engineering leaders - The purpose of these interviews is to provide students with the opportunity to learn about how course materials relate to the practice of creative engineering. Examples may include engineering project leaders, leading technical experts, entrepreneurs who are engineers, or other leaders that are trained engineers. The key requirement is that they are experienced and recognized for successfully delivering creative and innovative engineering outcomes.

I encourage everyone to study a situation or person that aligns with your personal or professional interests and aspirations. I’ll gladly help scope these assignments and please let me know if you have any questions.

General Course Expectations

**Preparation**  Plan to come to class having read the readings and prepared to contribute to class discussions. Attendance and active engagement are essential to the learning process in this course.

**Proactivity**  We encourage students to be proactive in both planning and execution. If you are experiencing - or anticipate experiencing - any problems, let us know ASAP.

**Punctuality**  Plan to come to class on time and complete all assignments on time.

**Personal Responsibility**  We expect all students to take responsibility for their learning, course obligations, and commitment to academic honesty.
Other Class Norms

- Open debates and disagreements about ideas are encouraged
- Do not engage in distracting side conversations while others are talking
- Turn off cellular phones before class begins
- Use laptops for note taking purposes only; otherwise they should remain closed.
- Raise your hand before speaking

Rice Honor Code

Students are responsible for maintaining the highest standards of honesty and integrity in their work and conduct. Students should be familiar with what constitutes plagiarism and always cite proper references of outside materials. Students should abide by the honor pledge they made upon entering Rice and include the following statement on all submitted assignments; “On my honor, I have neither given nor received any unauthorized aid on this (paper or exam)”.

Special Needs

Let us know during the first few weeks of the semester if you have disability needs and we will do what we can to accommodate these needs. Students with disabilities should contact Rice Disability Support Services at 713.348.5841 or http://dss.rice.edu.
Schedule, Topics, and Activities

*Syllabus may change slightly to accommodate unplanned opportunities or circumstances.*

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic and Readings</th>
<th>Class Activities</th>
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<tbody>
<tr>
<td>8/26</td>
<td>Course overview</td>
<td>• Course overview and introductions</td>
</tr>
<tr>
<td>8/28</td>
<td>Introduction to leadership and creativity</td>
<td>• Discuss readings</td>
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<tr>
<td></td>
<td>Robert J. Sternberg (2008) The WICS approach to leadership: Stories of leadership</td>
<td>• Video case – Creative engineering teams at IDEO</td>
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<td></td>
<td>and the structures and processes that support them. <em>The Leadership Quarterly,</em> pp.</td>
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<td>360–371. In ARES.</td>
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<tr>
<td>9/2</td>
<td>Introduction to leadership of teams</td>
<td>• Discuss readings</td>
</tr>
<tr>
<td></td>
<td>Frederick P. Morgeson, D. Scott DeRue and Elizabeth P. Karam (2010) Leadership in</td>
<td>• Leader in focus: Taran Swan at Nickelodean Latin</td>
</tr>
<tr>
<td></td>
<td>teams: A functional approach to understanding leadership structures and processes.</td>
<td>America</td>
</tr>
<tr>
<td></td>
<td>1. How did Swan’s background prepare her for the challenges her team faced? Was</td>
<td>• Complete the “Big Five” personality self-assessment</td>
</tr>
<tr>
<td></td>
<td>she lacking in any areas?</td>
<td>from <a href="http://www.personal.psu.edu/j5j/IPIP/ipipneo120.htm">http://www.personal.psu.edu/j5j/IPIP/ipipneo120.htm</a></td>
</tr>
<tr>
<td></td>
<td>2. What critical actions did Swan take to compose and launch her team?</td>
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<tr>
<td></td>
<td>3. How did she develop a high performing team?</td>
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<td></td>
<td>4. What challenge does she face at the end of the case and what should she do?</td>
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<td>9/4</td>
<td>Models of team development</td>
<td>• Discuss readings</td>
</tr>
<tr>
<td></td>
<td>Whetten &amp; Cameron (2011) Ch. 9, Building teams and teamwork. In Developing</td>
<td>• In class activity</td>
</tr>
<tr>
<td></td>
<td>Management Skills textbook.</td>
<td>• Complete the NEO-IPIP assessment and bring a copy of</td>
</tr>
<tr>
<td></td>
<td>J.R. Katzenbach and D.K. Smith (2006) The discipline of teams,</td>
<td>the results to class</td>
</tr>
<tr>
<td>9/9</td>
<td>The challenge of leading teams</td>
<td>• Leader in focus: Erik Peterson at Green Mountain</td>
</tr>
<tr>
<td></td>
<td>Answer the following questions from the Peterson case:</td>
<td>Cellular. In Harvard Packet</td>
</tr>
<tr>
<td></td>
<td>1. What were Peterson and his group’s mission and most important goals?</td>
<td>• Discuss assignment on communicating a vision</td>
</tr>
<tr>
<td></td>
<td>2. What were their main problems? What were the causes of these problems?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Evaluate the situation both inside and outside of the group.</td>
<td></td>
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<tr>
<td></td>
<td>3. Assess the strengths and weaknesses of the group’s leadership. What were the</td>
<td></td>
</tr>
<tr>
<td></td>
<td>group’s most critical needs?</td>
<td></td>
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<tr>
<td></td>
<td>4. Based on your analysis, what actions should Peterson take to create a higher</td>
<td></td>
</tr>
<tr>
<td></td>
<td>performing team?</td>
<td></td>
</tr>
</tbody>
</table>
Schedule, Topics, and Activities (cont.)

*Syllabus may change slightly to accommodate unplanned opportunities or circumstances.*

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic and Readings</th>
<th>Class Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/11</td>
<td>Methods and perspectives on innovating</td>
<td>- Discuss readings</td>
</tr>
<tr>
<td>9/16</td>
<td>Forming and launching new teams; crafting strategy</td>
<td>- Discuss readings and group project on engineering</td>
</tr>
<tr>
<td></td>
<td>Jeff Erickson and Lee Dyer (2004) Right from the start: Exploring the effects of</td>
<td>innovations</td>
</tr>
<tr>
<td></td>
<td>early team events on subsequent project team development and performance. *Administrative *</td>
<td>- Assign project teams on engineering innovations</td>
</tr>
<tr>
<td>9/18</td>
<td>Creating and communicating a compelling vision</td>
<td>- Discuss readings and methods for learning to create</td>
</tr>
<tr>
<td></td>
<td>Whetten &amp; Cameron (2011) Ch. 10, Leading positive change; Supplement A – Making</td>
<td>and deliver team visions</td>
</tr>
<tr>
<td></td>
<td>presentations.</td>
<td>- Discuss individual vision presentations</td>
</tr>
<tr>
<td></td>
<td>Jay Conger (1991) Inspiring others: The language of leadership. *Academy of</td>
<td>- Instructions for assessments will be discussed</td>
</tr>
<tr>
<td></td>
<td>Management Executive*, pp. 31-45. In ARES</td>
<td></td>
</tr>
<tr>
<td>9/23</td>
<td>Building team relationships for creativity</td>
<td>- Discuss readings and methods for delivering team</td>
</tr>
<tr>
<td></td>
<td>Business Review.*</td>
<td>- Assign project teams on team building activity</td>
</tr>
<tr>
<td>9/25</td>
<td>Personality and teamwork</td>
<td>- Review personality assessments and discuss how</td>
</tr>
<tr>
<td></td>
<td>Judge, Piccolo, and Kosalka (2009) The bright and dark sides of leader traits: A</td>
<td>personality influences leadership and teamwork-related</td>
</tr>
<tr>
<td></td>
<td>review and theoretical extension of the leader trait paradigm. *The Leadership</td>
<td>behaviors</td>
</tr>
<tr>
<td></td>
<td>Quarterly*, Vol. 20, pp. 855-875. In ARES</td>
<td>- Bring assessments to class</td>
</tr>
<tr>
<td>9/30</td>
<td>Creating structure: Assigning roles and responsibilities</td>
<td>- Discuss readings</td>
</tr>
<tr>
<td></td>
<td>Linda Hill and Kent Linebeck (2010) Be clear about how your team works. In Harvard</td>
<td>- In-class learning activity</td>
</tr>
<tr>
<td></td>
<td>Packet</td>
<td></td>
</tr>
<tr>
<td>10/2</td>
<td>Making decisions in teams: Empowering others</td>
<td>- Discuss readings</td>
</tr>
<tr>
<td></td>
<td>Whetten &amp; Cameron (2011) Ch. 8, Empowering others, pp. 443-462.</td>
<td>- Teams in focus: Applied research technologies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Optional case analysis due</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Complete assessment of empowerment</td>
</tr>
</tbody>
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Schedule, Topics, and Activities (cont.)

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<tr>
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<th>Class Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/7</td>
<td><strong>Making decisions in teams: Delegating to others</strong></td>
<td>• Discuss readings</td>
</tr>
<tr>
<td></td>
<td>Whetten &amp; Cameron (2011) Ch. 8, Delegating to others, pp. 463-472.</td>
<td>• In-class learning activity</td>
</tr>
<tr>
<td></td>
<td>Review for the first exam</td>
<td>• Complete assessment of empowerment and delegation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• First exam will be posted this week</td>
</tr>
<tr>
<td>10/9</td>
<td><strong>Conducting effective meetings in teams</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Whetten &amp; Cameron (2011) Supplement C, Conducting meetings</td>
<td>• Discuss readings</td>
</tr>
<tr>
<td></td>
<td>Whetten &amp; Cameron (2011) Ch. 9, Advantageous roles, pp. 512-517.</td>
<td>• In-class learning activity</td>
</tr>
<tr>
<td>10/14</td>
<td><strong>RECESS</strong></td>
<td></td>
</tr>
<tr>
<td>10/16</td>
<td><strong>Giving and receiving feedback</strong></td>
<td>• Discuss readings</td>
</tr>
<tr>
<td></td>
<td>Whetten &amp; Cameron (2011) Ch. 4, Communicating supportively</td>
<td>• In-class learning activity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Groups deliver team building activity (papers also due).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Complete assessment of skills for communicating feedback</td>
</tr>
<tr>
<td>10/21</td>
<td><strong>Creating a motivating team environment</strong></td>
<td>• Discuss readings</td>
</tr>
<tr>
<td></td>
<td>Whetten &amp; Cameron (2011) Ch. 6, Motivating others</td>
<td>• Optional case analysis due</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Complete assessment of motivation skills</td>
</tr>
<tr>
<td>10/23</td>
<td><strong>Creating a motivating team environment</strong></td>
<td>• Discuss readings</td>
</tr>
<tr>
<td></td>
<td>Whetten &amp; Cameron (2011) Ch. 6, Motivating others</td>
<td>• Groups deliver team building activity (papers also due).</td>
</tr>
<tr>
<td>10/28</td>
<td><strong>Guest Speaker</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10/30</td>
<td><strong>Creating a motivating team environment</strong></td>
<td>• Discuss readings</td>
</tr>
<tr>
<td></td>
<td>Whetten &amp; Cameron (2011) Ch. 6, Motivating others</td>
<td>• Team in focus: The Lumen and Absorb teams.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Optional case analysis due</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Groups deliver team building activity (papers also due).</td>
</tr>
</tbody>
</table>
**Schedule, Topics, and Activities (cont.)**

*Syllabus may change slightly to accommodate unplanned opportunities or circumstances.*

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<tr>
<th>Date</th>
<th>Topic and Readings</th>
<th>Class Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>11/4</td>
<td>Managing conflict in teams</td>
<td>• Discuss readings</td>
</tr>
<tr>
<td></td>
<td>Whetten &amp; Cameron (2011) Ch. 7, Managing conflict</td>
<td>• In class learning activity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Complete assessment of conflict management skills</td>
</tr>
<tr>
<td>11/6</td>
<td>Managing conflict in teams</td>
<td>• Discuss readings</td>
</tr>
<tr>
<td></td>
<td>Whetten &amp; Cameron (2011) Ch. 7, Managing conflict</td>
<td>• <strong>Team in focus</strong>: Henry Tam and the MGI Team</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Optional case analysis due</td>
</tr>
<tr>
<td>11/11</td>
<td><strong>Creativity skills for teams</strong></td>
<td>• Discuss readings</td>
</tr>
<tr>
<td></td>
<td>Whetten &amp; Cameron (2011) Ch. 3, Creative problem solving</td>
<td>• In class learning activity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Complete assessment of creative thinking skills</td>
</tr>
<tr>
<td>11/13</td>
<td><strong>Skills for building creative networks</strong></td>
<td>• Discuss readings</td>
</tr>
<tr>
<td></td>
<td>Linda Hill and Kent Linebeck (2010) Weave your own web of</td>
<td>• <strong>Leader in Focus</strong>: Heidi Roizen</td>
</tr>
<tr>
<td></td>
<td>influence. In Harvard Packet</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Medici Effect</em>. Boston, MA: Harvard Business School</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Publishing. In Harvard Packet</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>11/18</td>
<td><strong>Guest speaker</strong></td>
<td>• In class guest lecture and activities</td>
</tr>
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<td></td>
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<tr>
<td>11/20</td>
<td><strong>Final project presentations</strong></td>
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<tr>
<td>11/25</td>
<td><strong>Final project presentations</strong></td>
<td></td>
</tr>
<tr>
<td>11/27</td>
<td><strong>THANKSGIVING HOLIDAY</strong></td>
<td></td>
</tr>
<tr>
<td>12/2</td>
<td><strong>Adjourning teams and learning from experiences</strong></td>
<td>• Discuss readings</td>
</tr>
<tr>
<td></td>
<td>Torgeir Dingsøy (2005) Postmortem reviews: purpose and</td>
<td></td>
</tr>
<tr>
<td></td>
<td>approaches in software engineering. Information and Software</td>
<td></td>
</tr>
<tr>
<td>12/4</td>
<td><strong>Last class day</strong></td>
<td>• Share key ideas from the semester</td>
</tr>
<tr>
<td></td>
<td>Review the class and prepare for the final exam</td>
<td>• Leadership development plans and extra credit papers are due</td>
</tr>
</tbody>
</table>

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RCELI Certificate in Engineering Leadership Proposal
Appendix A-4

Syllabi for ENGI 218/219: Engineering Leadership Labs

Syllabus for ENGI 241: Professional Excellence for Engineers

Syllabus for ENGI 317: Leadership Action Learning

Syllabi for ENGI 318/319: Engineering Leadership Labs
COURSE DESCRIPTION: ENGI 218 exposes students to engineering leadership concepts in an interactive, experience-based environment that hones leadership skills. Students participate in guided reflection that focuses on successes and provides opportunities for improvement in a controlled setting. Activities include design/implementation activities, role-play, simulation, case study analysis, and student performance assessments. Curriculum includes both instructor-driven and student-structured content and exercises. ENGI 218 is limited to students participating in the Rice Center for Engineering Leadership Certificate Program.

During this course students will:

- Identify skills associated with RCEL competency domains needed to be an effective leader in an engineering environment.
- Identify skills needed to become a valuable team member in an engineering environment.
- Select and apply appropriate behaviors associated with leadership and management skills.
- Identify, analyze, and assess behaviors associated with targeted skills, and provide meaningful feedback.
- Integrate insights, reflections, and applied experiences into their on-going Reflective Best Self (RBS) paper and Leadership Development Plan (LDP).

INSTRUCTOR: Kaz Karwowski
Abercrombie A101
Office (713) 348-2359
Email: karwowski@rice.edu
Office Hours: 1-3 Tue, Thursday

Cesare Wright
Abercrombie A101
Office (713) 348-2623
Email: cesare@rice.edu
Office Hours: 1-3 Friday

CLASSROOM AND SCHEDULE: Monday’s- 1-3 and 3-5pm. ELLs will be held in room RZR 123.
Classrooms are not subject to change unless otherwise noted.
*This syllabus is subject to change throughout the semester.

<table>
<thead>
<tr>
<th>Week</th>
<th>Event</th>
<th>Learning and Practice Focus Skills</th>
<th>Pre-Read (Yes or No)</th>
<th>Assessment Cards</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Lab “We Deliver”</td>
<td>Students will practice: Setting and achieving goals; problem solving and decision making</td>
<td>No</td>
<td>Reflection Blog Due 8/29</td>
</tr>
<tr>
<td>25 Aug</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Holiday-NO ELL</td>
<td>Labor Day</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Sept</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Lab “Team Development and Effectiveness—Team Time”</td>
<td>Students will practice: Building positive relationships; Students will create a digital “Picture Book” of their team.</td>
<td>Yes Posted to Owl Space</td>
<td>Team Contract Posted to Owl Space by designated team representative 9/13</td>
</tr>
<tr>
<td>8 Sept</td>
<td></td>
<td>Read Wageman article on successful teams.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td>Lab Title</td>
<td>Students will practice:</td>
<td>Yes/No</td>
<td>Reflection Date</td>
</tr>
<tr>
<td>------------</td>
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<td>-------------------------------------------------------</td>
<td>-------</td>
<td>-----------------</td>
</tr>
<tr>
<td>15 Sept</td>
<td>Lab “Blast off” Practical Ingenuity</td>
<td>Problem solving and decision making while delivering an innovative and efficient solution to a complex problem. Read Section 1 of the Project Management Handbook</td>
<td>Yes</td>
<td>Blog Due 9/19</td>
</tr>
<tr>
<td>22 Sep</td>
<td>Lab “Leadership Reaction Course” (Class held 20 Sept at Texas A&amp;M)</td>
<td>Empowering and delegating while leading and managing a team in applied exercises.</td>
<td>Yes</td>
<td>Reflection Blog Due 9/26</td>
</tr>
<tr>
<td>29 Sep</td>
<td>Lab Technical Interviewing</td>
<td>Interviewing for technical positions associated with engineering internships.</td>
<td>Review Tech. Inter. Tips</td>
<td>Yes Reflection Blog Due 10/4 Update LDP and submit to OwlSpace</td>
</tr>
<tr>
<td>6 Oct</td>
<td>Lab “You put what, where?” Structured Communication</td>
<td>Oral and written (multimodal) communication.</td>
<td>Yes</td>
<td>Reflection Blog Due 10/10</td>
</tr>
<tr>
<td>13 Oct</td>
<td>Holiday-NO ELL</td>
<td>Columbus Day</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 Oct</td>
<td>Lab “Optimization” Decision Making</td>
<td>Problem solving and decision-making while evaluating the situation and applying practical and timely solutions. Read Part 2 of the Project Management Handbook</td>
<td>Yes</td>
<td>Reflection Blog Due 10/24 Update LDP and submit to OwlSpace</td>
</tr>
<tr>
<td>27 Oct</td>
<td>Lab “You don’t want what you think you want” Advocacy</td>
<td>Identifying mutual needs and concerns while mobilizing them to a desired outcome.</td>
<td>No</td>
<td>Reflection Blog Due 10/31</td>
</tr>
<tr>
<td>3 Nov</td>
<td>Lab “Let’s make a deal...” Managing Conflict and Negotiation</td>
<td>Diagnosing sources of potential conflict and managing influence and resources to reach a desired outcome.</td>
<td>Yes</td>
<td>Watch 2 Ep. of Pawn Stars Reflection Blog Due 11/7</td>
</tr>
</tbody>
</table>
Attendance Policy

1. **Attendance Requirements.** Students are expected to attend all ELLs offered in both Fall and Spring semesters. The ELL is highly experiential and cannot be re-created or made up. Absences impact your team and the effectiveness of the ELL. Attendance will always be taken. Missing more than two labs without valid reason may impact your grade.

2. **Known Absence Policy.** (Note: ELLs are the core of the RCEL Certificate—the instructor will only grant excused absences if the reason is justifiable and the student takes the initiative to seek prior approval according to the policies outlined below. **However, every effort must be made to schedule/reschedule potentially conflicting events so that they do not conflict with ELLs**)

2.1 **Absence Notification Procedures.** Students with exceptional circumstances will be approved on a case-by-case basis by the ELL instructor team: (ex. Official Project Team competitions, verified medical circumstances, PhD interviews, out of town interviews). Students should make every effort to not schedule meetings or appointments on Fridays.

- Email chrisg@rice.edu *(cc your team leader)* as soon as you have knowledge of the conflict, but no later than 2 weeks prior to the ELL to be missed. The ELL instructor will contact you within 48 hours of the notification. To be approved for an excused absence you must provide details for the conflict and why it justifies a missed ELL.

- No missed ELL will be deemed excused if notification is received less than 2 weeks prior to the ELL. (Excluding emergency absences.)
3. **Timeliness.** As with the attendance policy, late arrivals hinder the entire lab activity and impact all students. We expect all students to be on time for the ELL. All ELLs start promptly at 5 after the hour. The following late arrival policy applies:

- Three late arrivals (arriving 10 minutes after the hour)=one absence
- Arriving more than 30 minutes late or later will result in an absence.

**NOTE:** Students with longer travel distances between classes should coordinate with the instructor.

4. **Rice Honor Code**

Students are responsible for maintaining the highest standards of honesty and integrity in their work and conduct. Students should be familiar with what constitutes plagiarism and always cite proper references of outside materials. The case papers should include only analyses based on the case; no outside materials are required or permitted for these papers. Students should abide by the honor pledge they made upon entering Rice and include the following statement on all submitted assignments; “On my honor, I have neither given nor received any unauthorized aid on this (paper or exam”).

5. **Special Needs**

Let us know during the first few weeks of the semester if you have disability needs and we will do what we can to accommodate these needs. Students with disabilities should contact Rice Disability Support Services at 713.348.5841 or [http://dss.rice.edu](http://dss.rice.edu).

6. **Grading**

- 60% Participation
- 20% Blog Assignments
- 10% Leadership Development Plan (LDP)
- 10% Quizzes

Text:
Developing Management Skills; Whetten and Cameron, 8th Edition, 2011

* This syllabus is subject to change throughout the semester.
SUBJECT: RCEL Engineering Leadership Lab
ENGI 219 SPRING 2014

COURSE DESCRIPTION: ENGI 219 exposes students to engineering leadership concepts in an interactive, experience-based environment that hones leadership skills. Students participate in guided reflection that focuses on successes and provides opportunities for improvement in a controlled setting. Activities include design/implementation activities, role-play, simulation, case study analysis, and student performance assessments. Curriculum includes both instructor-driven and student-structured content and exercises. ENGI 219 is limited to students participating in the RCEL Certificate Program.

During this course students will:
- Identify skills associated with RCEL competency domains needed to be an effective leader in an engineering environment.
- Identify skills needed to become a valuable team member in an engineering environment.
- Select and apply appropriate behaviors associated with leadership and management skills.
- Identify, analyze, and assess behaviors associated with targeted skills, and provide meaningful feedback.
- Integrate insights, reflections, and applied experiences into their on-going Reflective Best Self (RBS) paper and Leadership Development Plan (LDP).

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</tr>
</thead>
<tbody>
<tr>
<td>1 13 Jan</td>
<td>Lab “Make it Move” Practical Ingenuity</td>
<td>Students will practice: Making ingenious use of available resources to craft a deliverable.</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>2 20 Jan</td>
<td>Holiday-NO ELL</td>
<td>MLK Day</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 27 Jan</td>
<td>Lab Advocacy</td>
<td>Students will practice: Active listening; interpersonal empathy and responsiveness; clearly articulating a point of view, approach, or position; evaluating and valuing the ideas and input of others; assessing and mobilizing the distinct skills and contributions of individual team members individuals.</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>4</td>
<td>3 Feb</td>
<td>Lab “You want what?” Negotiating</td>
<td><strong>Students will practice:</strong> Reaching mutual agreements and working relationships among interested parties.</td>
<td>Yes</td>
</tr>
<tr>
<td>5</td>
<td>10 Feb</td>
<td>Lab Ethics and Integrity</td>
<td>Students will practice: Ethical decision-making, resolving ethical dilemmas, and identifying and mobilizing appropriate support resources.</td>
<td>Yes</td>
</tr>
<tr>
<td>6</td>
<td>17 Feb</td>
<td>Lab Systems Thinking</td>
<td><strong>Students will practice:</strong> Thinking holistically, recognizing and responding to complexity, focusing on critical features, identifying inter-relationships and emergent qualities, and creating abstractions and models that simplify comprehension.</td>
<td>No</td>
</tr>
<tr>
<td>7</td>
<td>24 Feb</td>
<td>Student Planned</td>
<td></td>
<td>No</td>
</tr>
<tr>
<td>8</td>
<td>3 Mar</td>
<td>Holiday-NO ELL</td>
<td>Spring Break</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>10 Mar</td>
<td>Lab Optimization</td>
<td><strong>Students will practice:</strong> Taking initiative, decision-making, resourcefulness, delivering under adverse conditions and constraints, and ethical responsibility.</td>
<td>No</td>
</tr>
<tr>
<td>10</td>
<td>17 Mar</td>
<td>Lab “Leadership Reaction Course” Being Influential</td>
<td><strong>Students will practice:</strong> Taking initiative, being decisive, practical ingenuity, perseverance &amp; tenacity, and asserting influence.</td>
<td>No</td>
</tr>
<tr>
<td>11</td>
<td>24 Mar</td>
<td>Lab “Power and Influence”</td>
<td><strong>Students will practice:</strong> Identifying motivation and influence within key stakeholders in an organization, leveraging knowledge to attain a goal, and managing interpersonal workplace relationships.</td>
<td>No</td>
</tr>
</tbody>
</table>
Grading

60% Participation
20% Blog Assignments
10% Leadership Development Plan (LDP)
10% Quizzes

Text:
Developing Management Skills; Whetten and Cameron, 8th Edition, 2011

Attendance Policy

1. Attendance Requirements. Students are expected to attend all ELLs offered in both Fall and Spring semesters. The ELL is highly experiential and cannot be recreated or made up. Absences impact your team and the effectiveness of the ELL. Attendance will always be taken. Missing more than two labs without valid reason may impact your grade.

2. Known Absence Policy. (Note: ELLs are the core of the RCEL Certificate—the instructor will only grant excused absences if the reason is justifiable and the student takes the initiative to seek prior approval according to the policies outlined below. However, every effort must be made to schedule/reschedule potentially conflicting events so that they do not conflict with ELLs)

2.1 Absence Notification Procedures. Students with exceptional circumstances will be approved on a case-by-case basis by the ELL instructor team: (ex. Official Project Team competitions, verified medical circumstances, PhD interviews, out of town interviews). Students should make every effort to not schedule meetings or appointments on Fridays.
• Email chrisg@rice.edu (cc your team leader) as soon as you have knowledge of the conflict, but no later than 2 weeks prior to the ELL to be missed. The ELL instructor will contact you within 48 hours of the notification. To be approved for an excused absence you must provide details for the conflict and why it justifies a missed ELL.

• No missed ELL will be deemed excused if notification is received less than 2 weeks prior to the ELL. (Excluding emergency absences.)

3. Timeliness. As with the attendance policy, late arrivals hinder the entire lab activity and impact all students. We expect all students to be on time for the ELL. All ELLs start promptly at 5 after the hour. The following late arrival policy applies:

• Three late arrivals (arriving 10 minutes after the hour)=one absence
• Arriving more than 30 minutes late or later will result in an absence.

NOTE: Students with longer travel distances between classes should coordinate with the instructor.

4. Rice Honor Code

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5. Special Needs

Let us know during the first few weeks of the semester if you have disability needs and we will do what we can to accommodate these needs. Students with disabilities should contact Rice Disability Support Services at 713.348.5841 or http://dss.rice.edu.

* This syllabus is subject to change throughout the semester.
SUBJECT: PROFESSIONAL EXCELLENCE FOR ENGINEERS  ENGI 241  Fall 2014

COURSE DESCRIPTION: ENGI 241 is a one credit hour applied practicum and internship course that provides guided career and professional development for engineering students in a real-world industrial, academic, research, or other professional context. ENGI 241 prepares students to assimilate quickly, and to exceed employer expectations during their internships. Students will develop a functional awareness of the vision, mission, strategy, and objectives of the organization, such that they may identify how their interests and skills align with the needs and culture of the company.

Course learning objectives:
- Practice applied skills in designated RCEL competency domains.
- Evaluate and develop a functional awareness of personal strengths, weaknesses, and dispositions relative to the specific context of the professional environment.
- Refine ability to participate as a valuable and productive team member in an applied engineering context.
- Practice and evaluate success of leadership strategies in an applied context.
- Analyze, evaluate, and communicate self-awareness of strengths, weaknesses, and areas of potential growth based on on-the-job internship experiences.
- Communicate effectively with team members and supervisors to ensure project success.

INSTRUCTOR: Kaz Karwowski  Cesare Wright
Abercrombie A101  Abercrombie A101
Office (713) 348-2359  Office (713) 348-3181
Email: karwowski@rice.edu  Email: cesare@rice.edu
Office Hours: 1-3 Tue, Thursday  Office Hours: 1-3 Mon, Friday

CLASSROOM AND SCHEDULE: Students will participate in an internship at varying companies and locations and are required to submit periodic assignments, participate in teleconferences, and submit a final report highlighting lessons learned.

Assignments and due dates: All blogs and assignments are submitted to the ENGI 241 Owl Space Site.

April 29th
Course preparation- Students will confirm company positions, titles, supervisors and locations prior to leaving for their internships.

May 30th
First Check-in—Students will check in with the RCEL Staff informing them of any changes in title, job requirements or duties, location or supervisory changes. This will be done through the following wufoo link:  https://engrice.wufoo.com/forms/rcel-internship-update-and-checkin-for-engi-241/

June 6th
First blog post due—Workplace structure and politics – Who has the power?

June 13th
Second blog post due—Workplace culture – What are the norms, expectations, and taboos?
June 20th
Third blog post due— Organizational fit – What are your strengths relative to the demands of the working environment and the job requirements?

June 27th
Fourth blog post due— Organizational fit – What are your weaknesses relative to the demands of the working environment and the job requirements?

July 3rd
Fifth blog post due— Engage a senior engineer or manager – Meet with and/or interview a senior engineer or leader with the company and summarize the experience.

July 11th
Sixth blog post due— Expectations vs. reality – How does your experience of the job fit conform to or contrast your expectations?

July 18th
Seventh blog post due— Lead a project or component of a project (perhaps one that has been side-lined). Share your experiences.

Telecon—call into RCEL (866) 516-3949 --Participant Pin Code: #639381
International Toll—(904) 256-9416 **Times will be announced later

July 25th
Eighth blog post—Identify and engage with a mentor—Share any valuable insights you’ve gained.

August 29th
Final Reflection—Compile blog journals and assemble into one document submitted to OwlSpace and turned in as a printed copy.

Grading
Grading is based on students completing all assignments and blog posts.

10% - Participation in required pre-internship workshops
10% - Participation in telecon meetings
40% - Weekly blog reflections
40% - Completion of field practicum

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2
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COURSE TITLE: Leadership Action Learning

ENGI 317 Fall 2014

COURSE DESCRIPTION: ENGI 317 offers a real-world practicum experience that allows students to practice leadership skills in an applied context. During the semester, students must serve in a primary leadership capacity on a team, project, or other qualifying leadership exercise. In addition to facilitating the technical, management, and/or logistical requirements of the assigned leadership role, each student will participate in an individualized action learning based model of leadership development, through which he or she must implement a strategic development plan that focuses on one or more designated areas of potential growth.

The course will consist of a series of structured course meetings, followed by a field practice interim period of 6 weeks, during which students will meet for regular check-ins with a faculty advisor. The course will conclude with a final summary presentation on the reflective leadership growth experience of each student. Student will maintain a weekly progress report on the status of the project/team/etc. component of the leadership experience. As a vehicle for self-reflection and personal assessment, students will also post weekly blog-based journal entries on designated topics.

During this course students will:

- Evaluate personal strengths and weaknesses related to RCEL Leadership domain competencies and skills, and create a personal development plan.
- Practice evaluation, communication, team leadership, management, and self-assessment skills through responsibilities as a team or project leader.
- Practice technical implementation and management skills, as necessary to complete projects and/or responsibilities on schedule, according to specifications, an within budgetary constraints.
- Integrate insights, reflections, and applied experiences into their on-going Reflective Best Self (RBS) and Leadership Development Plan (LDP)
- Function effectively as both a team member and leader in an applied context (either through a project-based experience or other qualifying leadership engagement).

INSTRUCTOR:

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Office Hours: 1-3 Thurs.

Cesare Wright  
Abercrombie A102  
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Email: cesare@rice.edu  
Office Hours: 1-3 Tues.

Dr. David Nino  
Abercrombie A108  
Office (713) 348-3912  
Email: davidnino@rice.edu  
Office Hours: 1-3 Wed.

CLASSROOM AND SCHEDULE: Students will participate in experiential and project-based learning that will take place in applied team and project leadership settings outside of the classroom.

Required in-class sessions will be held in Sewall Hall 460.

Assignments and due dates: All blogs and assignments are submitted to the ENGI 317 Owl Space Site.
**Week 1 – Class session – Aug. 29th**
Instructor introduction to course, student self-reflection, and peer consultation.
Students break into teams to critically analyze individual strengths/weaknesses/dispositions/etc. Using the “Reflective Best Self” paper from ENGI 140, students self-identify and solicit peer feedback relating to areas of potential growth.

Assignment – Reading TBD

**Week 2 – Class session – Sept. 5th**
Designation of action learning development area(s) and identifying project/team/experience.
Using the self-reflection and peer feedback from Week 1, students will consult with faculty to determine the areas of potential growth that will serve as the strategic development focus and assessment criteria for the action learning component of the course.
Assignment – Reading TBD

**Week 3 – Class session – Sept. 12th**
Setting leadership experience benchmarks and assigning faculty advisor.
During Week 3, faculty will consult with students to determine appropriate leadership experience specific benchmarks for Week 5-8. Faculty advisors will be assigned based on the individual goals and needs of each student.

Assignment – Reading TBD

**Week 4 – Class session – Sept. 19th**
Final leadership experience review and group prep.
Week 4 is the last opportunity for students to revise the nature and scope of their leadership experience. As a group, the class will discuss and provide feedback on the leadership experience plan and benchmarks of each student. Faculty will make final recommendations and adjustments to development plan. Students will set check-in times/dates with faculty advisor and consult individually following the group discussion.

(Students must begin applied leadership experience by Sept. 19th)

Assignment – Reading TBD

**Week 5-12 – Fieldwork**
Students work on projects, teams, exercises, or other approved leadership development experiences out of class.

Assignment – ALL DUE ON A WEEKLY BASIS: blog journal entry; progress report; advisor check-in

**Week 13 – Class session – Nov. 21st**
Students return to class to prepare for final presentation. Faculty and student peers provide feedback.

**Week 14 – No Class - Thanksgiving**

**Week 15 – Class session – Dec. 5th**
***Final Presentation***

Assignment – Compiled blog journal & progress report.
Grading:

20% - Progress report
25% - Blog journal
40% - Participation (attendance, project involvement, instructor evaluation of leadership engagement)
15% - Final presentation

Attendance:

Since the majority of the work for this course takes place out of the classroom, it is essential that you attend ALL in-class sessions. Failure to attend more than one in-class session may result in a failing grade for the course.

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SUBJECT: RCEL Engineering Leadership Lab ENGI 318 Fall 2014

COURSE DESCRIPTION: ENGI 318 expands on the leadership development labs presented in ENGI 218/219. Participants in this course serve as Student Coaches for the weekly ENGI 218 Engineering Leadership Labs (ELLs). Each student must develop, refine, and lead multiple labs. During the ELLs, Student Coaches provide guidance, feedback, and performance evaluation for ENGI 218 students. The course includes mandatory discussion leading, and students will engage in structured self-evaluation throughout the semester. Activities include design-implement activities, role-play, simulation, case study analysis, and performance assessment of students. ENGI 318 is limited to students participating in the Rice Center for Engineering Leadership Certificate.

During this course students will:

- Evaluate and provide feedback for ENGI 218 students and teams on skills associated with RCEL competency domains.
- Communicate and explain the importance of those skills in relation to engineering leadership and applied lab exercises, and evaluate the understanding and performance of ENGI 241 students of teams in this regard.
- Practice evaluation, communication, team leadership, management, and self-assessment skills through responsibilities as a Student Coach.
- Integrate insights, reflections, and applied experiences into their on-going Reflective Best Self (RBS) Leadership Development Plan (LDP)
- Function effectively as both a team member and leader to develop and implement lab exercises and content.

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Office Hours: 1-3 Tue, Thursday Office Hours: 1-3 Friday

CLASSROOM AND SCHEDULE: Monday’s- 1-3 and 3-5pm. ELLs will be held in room RZR 123.
Classrooms are not subject to change unless otherwise noted. * This syllabus is subject to change throughout the semester.

318 Student Coach assignments/responsibilities:

40% Lab development and implementation
   Develop and lead a minimum of 4 labs over the course of the semester
20% Blog reflection journal
   Maintain reflection journal any sessions during which student leads labs
20% Discussion Leading
   Lead pre-lab discussion, topic introduction, and pre-read overview for ELL
20% Weekly Student Coach meeting participation
   Attend and participate in weekly student coach meeting and ELL planning session
<table>
<thead>
<tr>
<th>Week</th>
<th>Event</th>
<th>Learning and Practice Focus Skills</th>
<th>Pre-Read (Yes or No)</th>
<th>Assessment Cards</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 25 Aug</td>
<td><strong>Lab “We Deliver”</strong></td>
<td><strong>As a member of an engineering team, students will practice:</strong> Setting and achieving goals; problem solving and decision making</td>
<td>No</td>
<td>Yes Reflection Blog Due 8/29</td>
</tr>
<tr>
<td>2 1 Sept</td>
<td><strong>Holiday-NO ELL</strong></td>
<td>Labor Day</td>
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<tr>
<td>3 8 Sept</td>
<td><strong>Lab “Team Development and Effectiveness—Team Time”</strong></td>
<td><strong>Students will practice:</strong> Building positive relationships; Students will create a digital “Picture Book” of their team.</td>
<td>Yes</td>
<td>No Assessment Team Contract Posted to Owl Space by designated team representative</td>
</tr>
<tr>
<td>4 15 Sept</td>
<td><strong>Lab “Blast off” Practical Ingenuity</strong></td>
<td><strong>Students will practice:</strong> Problem solving and decision making while delivering an innovative and efficient solution to a complex problem.</td>
<td>No</td>
<td>Reflection Blog Due 9/19</td>
</tr>
<tr>
<td>5 22 Sept</td>
<td><strong>Lab “Leadership Reaction Course” (Class held 20 Sept at Texas A&amp;M)</strong></td>
<td><strong>Students will practice:</strong> Empowering and delegating while leading and managing a team in applied exercises.</td>
<td>Yes Pg. 443-447</td>
<td>Yes Reflection Blog Due 9/26</td>
</tr>
<tr>
<td>6 29 Sept</td>
<td><strong>Lab Technical Interviewing</strong></td>
<td><strong>Students will practice:</strong> Interviewing for technical positions associated with engineering internships.</td>
<td>Yes</td>
<td>Yes Reflection Blog Due 10/4 Update LDP and submit to OwlSpace</td>
</tr>
<tr>
<td></td>
<td>Date</td>
<td>Activity</td>
<td>Students will practice:</td>
<td>Yes</td>
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<tr>
<td>7</td>
<td>6 Oct</td>
<td>Lab “You put what, where?” Structured Communication</td>
<td>Oral and written (multimodal) communication.</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>13 Oct</td>
<td>Holiday-NO ELL</td>
<td>Columbus Day</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>20 Oct</td>
<td>Lab “Optimization” Decision Making</td>
<td>Problem solving and decision-making while evaluating the situation and applying practical and timely solutions.</td>
<td>No</td>
</tr>
<tr>
<td>10</td>
<td>27 Oct</td>
<td>Lab “You don't want what you think you want” Advocacy</td>
<td>Identifying mutual needs and concerns while mobilizing them to a desired outcome.</td>
<td>No</td>
</tr>
<tr>
<td>11</td>
<td>3 Nov</td>
<td>Lab “Let’s make a deal…” Managing Conflict and Negotiation</td>
<td>Diagnosing sources of potential conflict and managing influence and resources to reach a desired outcome.</td>
<td>Yes</td>
</tr>
<tr>
<td>12</td>
<td>10 Nov</td>
<td>Lab “Who has the power?” Building Power and using influence</td>
<td>Identifying power dynamics and mobilizing to a desired outcome.</td>
<td>Yes</td>
</tr>
<tr>
<td>13</td>
<td>17 Nov</td>
<td>Lab “What I hear you saying is…” Interpersonal Communications</td>
<td>Inquiry, active listening, and critical dialogue.</td>
<td>Yes</td>
</tr>
<tr>
<td>14</td>
<td>24 Nov</td>
<td>Student Planned</td>
<td></td>
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<tr>
<th>Date</th>
<th>Feedback Session</th>
<th>All Students-Will provide feedback and suggestions for Program and ELL improvement to RCEL staff.</th>
<th>Review Topics Prior to Lab</th>
<th>No Feedback Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Dec</td>
<td>(ALL)</td>
<td></td>
<td>No</td>
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During this course students will:

- Evaluate and provide feedback for ENGI 219 students and teams on skills associated with RCEL competency domains.
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   Lead pre-lab discussion, topic introduction, and pre-read overview for ELL
20% Weekly Student Coach meeting participation
   Attend and participate in weekly student coach meeting and ELL planning session

1
- Select and apply appropriate behaviors associated with leadership and management skills.
- Identify, analyze, and assess behaviors associated with targeted skills, and provide meaningful feedback.
- Integrate insights, reflections, and applied experiences into their on-going Reflective Best Self (RBS) paper and Leadership Development Plan (LDP).

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<td>13 Jan</td>
<td>Lab “Make it Move” Practical Ingenuity</td>
<td>Students will practice: Making ingenious use of available resources to craft a deliverable.</td>
<td>No</td>
</tr>
<tr>
<td>2</td>
<td>20 Jan</td>
<td>Holiday-NO ELL</td>
<td>MLK Day</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>27 Jan</td>
<td>Lab Advocacy</td>
<td>Students will practice: Active listening; interpersonal empathy and responsiveness; clearly articulating a point of view, approach, or position; evaluating and valuing the ideas and input of others; assessing and mobilizing the distinct skills and contributions of individual team members individually.</td>
<td>Yes</td>
</tr>
<tr>
<td>4</td>
<td>3 Feb</td>
<td>Lab “You want what?” Negotiating</td>
<td>Students will practice: Reaching mutual agreements and working relationships among interested parties.</td>
<td>Yes</td>
</tr>
<tr>
<td>Date</td>
<td>Lab/Activity</td>
<td>Description</td>
<td>Reflection</td>
<td>Blog Due</td>
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<tr>
<td>5 10 Feb</td>
<td>Lab Ethics and Integrity</td>
<td>Students will practice: Ethical decision-making, resolving ethical dilemmas, and identifying and mobilizing appropriate support resources.</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>6 17 Feb</td>
<td>Lab Systems Thinking</td>
<td><strong>Students will practice:</strong> Thinking holistically, recognizing and responding to complexity, focusing on critical features, identifying inter-relationships and emergent qualities, and creating abstractions and models that simplify comprehension.</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>7 24 Feb</td>
<td>Student Planned</td>
<td></td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>8 3 Mar</td>
<td>Holiday-NO ELL</td>
<td>Spring Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 10 Mar</td>
<td>Lab Optimization</td>
<td><strong>Students will practice:</strong> Taking initiative, decision-making, resourcefulness, delivering under adverse conditions and constraints, and ethical responsibility.</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>10 17 Mar</td>
<td>Lab “Leadership Reaction Course”</td>
<td><strong>Students will practice:</strong> Taking initiative, being decisive, practical ingenuity, perseverance &amp; tenacity, and asserting influence.</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>11 24 Mar</td>
<td>Lab “Power and Influence”</td>
<td><strong>Students will practice:</strong> Identifying motivation and influence within key stakeholders in an organization, leveraging knowledge to attain a goal, and managing interpersonal workplace relationships.</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Date</td>
<td>Event</td>
<td>Details</td>
<td>Activity</td>
<td>Assignment</td>
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<tr>
<td>12</td>
<td>Lab “Diverse Connections”</td>
<td>Students will practice: Communicating to diverse constituencies and stakeholders using the same technical material.</td>
<td>Yes</td>
<td>Reflection Blog Due</td>
</tr>
<tr>
<td>13</td>
<td>LRC</td>
<td>Students will practice: Active participation as a team member, working quickly and effectively under adverse conditions, resourcefulness in mobilizing human and material assets, perseverance, and personal/interpersonal motivation skills.</td>
<td>No</td>
<td>Yes Reflection Blog Due</td>
</tr>
<tr>
<td>14</td>
<td>Feedback Session (ALL)</td>
<td>All Students will provide feedback and suggestions for program and ELL improvement to RCEL staff.</td>
<td>Review Topics Prior to Lab</td>
<td>No</td>
</tr>
<tr>
<td>15</td>
<td>Completion Ceremony and Reception</td>
<td>Location: TBD</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Attendance Policy
1. **Attendance Requirements.** Students must attend all ELLs offered in both Fall and Spring semesters. The ELL is highly experiential and cannot be recreated or made up. Absences impact your team and the effectiveness of the ELL. Attendance will always be taken. Missing more than two labs without valid reason could put you at risk for not passing the course or completing the RCEL Certificate.

2. **Known Absence Policy.** (Note: ELLs are the core of the RCEL Certificate—the instructor will only grant excused absences if the reason is justifiable and the student takes the initiative to seek prior approval according to the policies outlined below. However, every effort must be made to schedule/reschedule potentially conflicting events so that they do not conflict with ELLs)

2.1 **Absence Notification Procedures.** Students with exceptional circumstances will be approved on a case-by-case basis by the ELL instructor team: (ex. Official Project Team competitions, verified medical circumstances, PhD interviews, out of town interviews). Students should make every effort to not schedule meetings or appointments on Fridays.

- Email chrisg@rice.edu (cc your team leader) as soon as you have knowledge of the conflict, but no later than 2 weeks prior to the ELL to be missed. The ELL instructor will contact you within 48 hours of the notification. To be approved for an excused absence you must provide details for the conflict and why itjustifies a missed ELL.

- No missed ELL will be deemed excused if notification is received less than 2 weeks prior to the ELL. (Excluding emergency absences.)

3. **Timeliness.** As with the attendance policy, late arrivals hinder the entire lab activity and impact all students. We expect all students to be on time for the ELL. All ELLs start promptly at 5 after the hour. The following late arrival policy applies:
• Three late arrivals (arriving 10 minutes after the hour)=one absence
• Arriving more than 30 minutes late or later will result in an absence.

NOTE: Students with longer travel distances between classes should coordinate with the instructor.

4. Rice Honor Code

Students are responsible for maintaining the highest standards of honesty and integrity in their work and conduct. Students should be familiar with what constitutes plagiarism and always cite proper references of outside materials. The case papers should include only analyses based on the case; no outside materials are required or permitted for these papers. Students should abide by the honor pledge they made upon entering Rice and include the following statement on all submitted assignments; “On my honor, I have neither given nor received any unauthorized aid on this (paper or exam)”.

5. Special Needs

Let us know during the first few weeks of the semester if you have disability needs and we will do what we can to accommodate these needs. Students with disabilities should contact Rice Disability Support Services at 713.348.5841 or http://dss.rice.edu.

* This syllabus is subject to change throughout the semester.