Syllabus – Advanced Engineering Leadership Development
Fall 2015 Semester
ESI 6900 – Section 2303

1. **Catalog Description:** Advanced Engineering Leadership Development is a practicum designed to further develop the leadership capabilities of graduate engineering students, through a course of study that reviews and applies strategic leadership concepts and knowledge that are critical to the success of engineering-based businesses. The course further supplements and develops the students’ leadership framework and assists in preparing them for engineering leadership opportunities in what may be a highly-uncertain and volatile business environment, through a combination of case study evaluations, class discussions, and assignments (individual and team-based), lectures, and insight and perspectives from practicing industrial and academic engineering leaders on topics relevant to strategic leadership and management approaches.

2. **Course Overview:** Many engineering-based industries and businesses are now required to operate successfully in a highly uncertain, complex, highly-competitive and rapidly-changing business environment. Engineering leaders must help their organizations become “learning machines”, integrating strategic intent in the way they think, behave and influence their organization and the staff. Leaders who learn, practice and effectively apply strategic leadership skills can catalyze the organization’s learning process and help create and sustain competitive advantage.

   The course is oriented around understanding strategy as a process and the continuous cycle of activities where leaders: assess their organizational position both internally and externally within the industry; understand who their organization is and where it can be successful through clearly defining and seeking a shared vision, mission and values within the organization; learning how to lead the organization forward through defined business and leadership strategies and an effective implementation plan; and evaluating the organization’s progress towards meeting the key drivers as well as changes that may be needed to meet current and future needs and maintain a sustainable competitive advantage. In exploring the strategic leadership cycle of activities, the course integrates other relevant topics including: an overview of key business fundamentals; perspectives on engineers as leaders; the concept of competitive advantage; innovation and other selected modern-day leadership strategies (including ethical leadership); common decision-making approaches; the concepts of risk and risk management; leadership and accountability during crises; the global business world and globally-responsible leadership; and the concept of innovation and ethics in engineering businesses. Assignments will be tailored to support the classroom activities from the perspective of real-world, engineering-based applications of topics covered. A class project (and presentation) will also provide students with a real-world, hands-on application of the concepts and topics discussed throughout the semester course.

3. **Credit Hours:** 2
4. **Prerequisites:** EGN 4038, EGN 6039, or instructor approval.

5. **Course Objectives:** Assist students in understanding how to develop and practice engineering leadership skills with strategic intent, and the learning process of strategic leadership in organizations. Provide students with a rounded learning experience and demonstrated broad perspective in key topics relevant to advanced engineering leadership. Prepare students to more fully understand and embrace their roles as proficient engineering leaders in a local, regional or global environment, including effective respectful working relationships with different cultures and people. Improve students’ abilities to understand ambiguous situations, vet and resolve complex issues, and make decisions more effectively, within a values-based and ethical leadership framework. Assist students in communicating more effectively with target audiences with an ability to influence, persuade, motivate and inspire them.

6. **Contribution of course to meeting the professional component:** N/A as course is not specific to a major

7. **Relationship of course to program outcomes (undergraduate):** Explore the role and responsibilities that engineers have in successfully leading organizations in an uncertain, complex, and rapidly-changing business environment. Students will: learn how to succeed on multidisciplinary teams; gain an understanding of professional and ethical responsibility; learn how to communicate more effectively; acquire a broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context; develop an understanding of contemporary business and societal issues that leaders face within the engineering industry.

8. **Instructor:** Bill McElroy, P.E., Engineering Leadership Institute (ELI), University of Florida College of Engineering
   a. Office location: On-campus Tuesdays (NEB) and Friday mornings (Weil); off-campus other days
   b. Telephone: cell phone @ 404-915-0396; ELI office @ 352-392-7047
   c. E-mail address: mcelrowj@ufl.edu
   d. Web site: UF course Canvas web site
   e. Office hours: flexible, by appointment
   f. Teaching assistant: none
   Notice: Please send email messages to the instructor’s primary email address mcelrowj@ufl.edu. Only use the Canvas course website mail for requests or actions that are not urgent.

9. **Meeting Times:** Fridays, Periods 2 - 3 (8:30 a.m. – 10:25 a.m.)

10. **Meeting Location:** Weil 273
11. **Class/laboratory schedule:** The course will be delivered weekly in the 2-hour segments typically through class discussions/workshops on case studies, assignments and/ or key topics facilitated by the instructor, and supported by guest presenters, class lectures and presentations.

12. **Material and Supply Fees:** – N/A

13. **Textbooks and Software Required:**
   
a. **Title:** Becoming a Strategic Leader – Your Role in Your Organization’s Enduring Success  
b. **Author:** Hughes, R.L., Beatty, K.C. and D.L. Dinwoodie  
c. **Publication date and edition:** 2014, 2nd Edition  
d. **ISBN number:** 978-1-118-56723-4  

   
a. **Title:** The Good Struggle – Responsible Leadership in an Unforgiving World  
b. **Author:** Badaracco, Joseph L.  
c. **Publication date and edition:** 2013  
d. **ISBN number:** 978-1-4221-9164-4

14. **Additional Readings:** Students will have additional (typically weekly) case study and reading assignments that will be posted in the course schedule.

15. **Course Outline:** Following introductory class sessions, Advanced Engineering Leadership Development will meet course objectives and overview provisions through weekly sessions that generally track the continuous cycle of strategic leadership activities outlined in the base texts. Students will be provided with a detailed course schedule that outlines weekly reading assignments, expected weekly class discussion topics, and case studies and assignments. Assignments will be tailored to support the classroom activities from the perspective of real-world, engineering-based applications of topics covered. The class project (with a presentation) will be designed to provide students with a valuable, learning experience through a real-world, hands-on application of the concepts and topics discussed throughout the semester course.

16. **Attendance and Expectations:** Attendance is mandatory at all sessions, and more than one absence can result in a loss of a letter grade per each absence over one at the discretion of the instructor, subject to the UF attendance policies. All assigned readings are mandatory and are to be completed before the corresponding class session. Each reading has been specifically chosen to provide a certain insight or skill. Unless stated otherwise, assignments are to be submitted via Canvas by the stated deadline. Late submissions are not accepted, subject to the policies of the undergraduate (https://catalog.ufl.edu/ugrad/current) or graduate (http://gradschool.ufl.edu/students/catalog.html) catalogues, as appropriate.

17. **Grading:** Final grades will be determined as follows:
• Students will receive weekly points for class participation and brief readiness assurance quizzes (RAQs) that may be given based on the assigned readings. The ratio of the student’s cumulative weekly class points to the maximum possible weekly class points will count for 20%.

• The ratio of the student’s cumulative assignment scores to the maximum possible assignment scores will count for 45%. For assignments (if any) that are team-based, each team member will receive the same score for those assignments (provided they participated).

• The ratio of the student’s project summary and presentation to the maximum possible article summary presentations score will count for 35%. Should the project be a team-based effort, each team member will receive the same score for the completed project (provided they participated).

**Grading Scale:** The student’s final class grade will be based on the ratio of their total weighted points to the total maximum possible weighted points, and compared to the grade scale for the class:

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<tr>
<th>Grade</th>
<th>Points</th>
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<tbody>
<tr>
<td>A</td>
<td>90 or above</td>
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<tr>
<td>A-</td>
<td>87 - 89</td>
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<tr>
<td>B+</td>
<td>84 - 86</td>
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<tr>
<td>B</td>
<td>80 - 83</td>
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<tr>
<td>B-</td>
<td>77 - 79</td>
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<td>C+</td>
<td>74 - 76</td>
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<tr>
<td>C</td>
<td>70 - 73</td>
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<td>C-</td>
<td>67 - 69</td>
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<td>D+</td>
<td>64 - 66</td>
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<td>D</td>
<td>60 - 63</td>
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<td>D-</td>
<td>57 - 59</td>
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<td>E</td>
<td>56 or below</td>
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For graduate students: In order to graduate, graduate students must have an overall GPA and an upper-division GPA of 3.0 or better (B or better). Note: a B- average is equivalent to a GPA of 2.67, and therefore, it does not satisfy this graduation requirement. For more information on grades and grading policies, visit: [http://gradschool.ufl.edu/students/catalog.html](http://gradschool.ufl.edu/students/catalog.html)

**18. Make-up Exam Policy:** Makeup exams will only be allowed under rare circumstances at the discretion of the instructor, subject to the policies of the undergraduate ([https://catalog.ufl.edu/ugrad/current](https://catalog.ufl.edu/ugrad/current)) or graduate ([http://gradschool.ufl.edu/students/catalog.html](http://gradschool.ufl.edu/students/catalog.html)) catalogues, as appropriate.

**19. Honesty Policy:** All students admitted to the University of Florida have signed a statement of academic honesty committing themselves to be honest in all academic work and understanding that failure to comply with this commitment will result in disciplinary action. This statement is a reminder to uphold your obligation as a UF student and to be honest in all work submitted and exams taken in this course and all others.
20. **Accommodation for Students with Disabilities**: Students requesting classroom accommodation must first register with the Dean of Students Office. That office will provide the student with documentation that he/she must provide to the course instructor when requesting accommodation.

UF Counseling Services: Resources are available on-campus for students having personal problems or lacking clear career and academic goals. The resources include:

- UF Counseling & Wellness Center, 3190 Radio Rd, 392-1575, psychological and psychiatric services

- Career Resource Center, Reitz Union, 392-1601, career and job search services.

21. **Software Use**: All faculty, staff and student of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.