

# CERTIFICATE IN ENGINEERING LEADERSHIP

## Program Learning Outcomes for the Certificate in Engineering Leadership

Upon completing the certificate in Engineering Leadership, students will be able to:

1. **Communicate Effectively:** Apply effective oral, written, and interpersonal communication strategies.
2. **Make Timely Decisions:** Apply analytical and creative problem solving to deliver timely solutions based on the information at hand.
3. **Work on Teams:** Understand and analyze team dynamics to empower those around them to be successful in accomplishing team goals.
4. **Manage Projects:** Demonstrate knowledge of the basic tools and techniques to deliver projects on-time, on budget and within scope.
5. **Self-Lead:** Develop self-awareness to build personal mastery, exhibit discipline, and make conscious self-improvement.
6. **Create a Vision:** Develop a clear vision that sets future personal and team direction.
7. **Apply Ethics and Analyze Values:** Analyze personal and organizational values and apply ethics concepts to their own decision-making.

## Requirements for the Certificate in Engineering Leadership

Students pursuing the certificate in Engineering Leadership must complete:

- A minimum of 7 courses (11-13 credit hours, depending on course selection) to satisfy certificate requirements.
- A Leadership Development Plan.
- An Engineering Internship.
- An Engineering Launch Pad Requirement.
- A Senior Leadership Portfolio and Presentation.
- A minimum overall GPA of 2.00 in required coursework with a minimum grade of C (2.00 grade points) in each course.

No credit hours counted toward the student's major or minor degree requirements can be applied toward the certificate. Only declared Engineering majors are eligible for the certificate and are required to formally declare their intention to pursue the certificate within their first two years at Rice.

This certificate is not a freestanding degree program; in addition to fulfilling the certificate requirements outlined below, candidates will be required to complete successfully the degree program to which they have been admitted in order to receive this certificate. Upon completion, the certificate is awarded at the same time as the conferral of the student's Rice degree, along with a formal notation on their academic transcript.

The courses listed below satisfy the requirements for this certificate. In certain instances, courses not on this official list may be substituted upon approval of the certificate's academic advisor or, where applicable, the Program Director. (Course substitutions must be formally applied and entered into Degree Works by the certificate's [Official Certifier](https://registrar.rice.edu/facstaff/degreeworks/officialcertifier/) (<https://registrar.rice.edu/facstaff/degreeworks/officialcertifier/>.) Students

and their academic advisors should identify and clearly document the courses to be taken.

### Summary

Code	Title	Credit Hours
Total Credit Hours Required for the Certificate in Engineering Leadership		11-13

### Certificate Requirements

Code	Title	Credit Hours
<b>Core Requirements</b>		
RCEL 100	SELF-AWARENESS AND THE ENGINEERING LEADER	2
RCEL 200	PERSONAL DEVELOPMENT FOR THE ENGINEERING LEADER	2
RCEL 300	DEVELOPMENT OF HIGH PERFORMING ENGINEERING TEAMS	2
RCEL 400	LEADING HIGH PERFORMING ENGINEERING TEAMS	2
<b>Leadership Development Plan <sup>1</sup></b>		
<b>Engineering Internship <sup>2</sup></b>		
RCEL 241	INTERNSHIP PRACTICUM FOR ENGINEERING LEADERSHIP	0-1
<b>Engineering Launch Pad Requirement</b>		
<i>Select 1 course from the following:</i>		1-2
RCEL 410	ENGINEERING LAUNCH PAD-RESEARCH	
RCEL 420	ENGINEERING LAUNCH PAD-INDUSTRY	
RCEL 430	ENGINEERING LAUNCH PAD-NON-ENGINEERING PATHWAYS	
RCEL 440	ENGINEERING LAUNCH PAD-ENTREPRENEURSHIP	
<b>Leadership Action Learning</b>		
RCEL 450	ENGINEERING PROJECT MANAGEMENT AND LEADERSHIP ACTION LEARNING	2
<b>Senior Leadership Portfolio and Presentation <sup>3</sup></b>		
<b>Total Credit Hours</b>		<b>11-13</b>

### Footnotes and Additional Information

<sup>1</sup> The purpose of the Development Plan is to understand one's personal leadership capabilities, synthesize the "lessons learned" from experiences, and use experience to manage the development of the capabilities needed to become an engineering leader.

<sup>2</sup> The certificate in Engineering Leadership requires all students to participate in a qualifying summer internship, ideally after the sophomore year. To receive credit for the internship experience, students enroll in RCEL 241 *Internship Practicum for Engineering Leadership*.

<sup>3</sup> The certificate program culminates in the creation of a comprehensive Leadership Portfolio, which documents the personal, academic, and professional growth of the student over the course of their time in the program. Each student must also deliver a final Senior Leadership Presentation that synthesizes and expands upon the information included in the Leadership Portfolio.

### Additional Recommended Courses

The following courses are not required to complete the certificate in Engineering Leadership, but are highly recommended:

Code	Title	Credit Hours
BUSI 310	LEADING PEOPLE IN ORGANIZATIONS	3
ENGI 120	INTRODUCTION TO ENGINEERING DESIGN	3
ENGI 128	INTRODUCTION TO ENGINEERING SYSTEMS	3
ENGI 303 / CEVE 322	ENGINEERING ECONOMICS	3
ENGI 320 / CEVE 320	ETHICS AND ENGINEERING LEADERSHIP	3
RCEL 242	PROFESSIONAL COMMUNICATION FOR ENGINEERING LEADERS	3

## Policies for the Certificate in Engineering Leadership

### Program Restrictions and Exclusions

Students pursuing the certificate in Engineering Leadership should be aware of the following program restriction:

- As noted in [Majors, Minors, and Certificates \(https://ga.rice.edu/undergraduate-students/academic-opportunities/majors-minors-certificates/\)](https://ga.rice.edu/undergraduate-students/academic-opportunities/majors-minors-certificates/), students may declare their intent to pursue a university certificate only after they have first declared a major.
- No credit hours counted toward a student's major or minor degree requirements can be applied toward the certificate in Engineering Leadership.
- Only declared Engineering majors are eligible for the certificate and are required to declare formally their intention to pursue the certificate within their first two years at Rice.

### Transfer Credit

For Rice University's policy regarding transfer credit, see [Transfer Credit \(https://ga.rice.edu/undergraduate-students/academic-policies-procedures/transfer-credit/\)](https://ga.rice.edu/undergraduate-students/academic-policies-procedures/transfer-credit/). Some departments and programs have additional restrictions on transfer credit. Requests for transfer credit must be approved for Rice equivalency by the designated transfer credit advisor for the appropriate academic department offering the Rice equivalent course (corresponding to the subject code of the course content). The Office of Academic Advising maintains the university's official list of [transfer credit advisors \(https://oaa.rice.edu/advising-network/transfer-credit-advisors/\)](https://oaa.rice.edu/advising-network/transfer-credit-advisors/) on their website: <https://oaa.rice.edu>. Students are encouraged to meet with the applicable transfer credit advisor as well as their academic program director when considering transfer credit possibilities.

### Additional Information

For additional information, please see the Engineering Leadership website: <https://www.rcelconnect.org/>.

## Opportunities for the Certificate in Engineering Leadership

### Academic Honors

The university recognizes academic excellence achieved over an undergraduate's academic history at Rice. For information on university honors, please see [Latin Honors \(https://ga.rice.edu/undergraduate-students/honors-distinctions/university/\)](https://ga.rice.edu/undergraduate-students/honors-distinctions/university/) (*summa cum laude*, *magna cum laude*, and *cum laude*) and [Distinction in Research and Creative Work \(https://ga.rice.edu/undergraduate-students/honors-distinctions/university/\)](https://ga.rice.edu/undergraduate-students/honors-distinctions/university/). Some departments have department-specific Honors awards or designations.

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