



University of Puerto Rico  
 Mayagüez Campus  
 College of Engineering  
 Department of Industrial Engineering  
 Bachelor of Science in Industrial Engineering



## COURSE SYLLABUS

<b>COURSE TITLE:</b>	Introduction to Engineering Management
<b>ALPHA-NUMERIC CODIFICATION:</b>	ININ 5200
<b>NUMBER OF CREDITS-CONTACT HOURS:</b>	Three credits / 45 hours
<b>PREREQUISITES, COREQUISITES AND OTHER REQUIREMENTS:</b>	ININ 4015 or ININ 4007 or Equivalent
<b>COURSE DESCRIPTION:</b>	
<p><b>Spanish:</b> Estudio y aplicación de los fundamentos de conceptos de gerencia aplicados a equipos multidisciplinares de ingeniería.</p>	
<p><b>English:</b> Study and application of the fundamentals of management concepts applied to multidisciplinary engineering teams.</p>	
<b>COURSE OBJECTIVES:</b>	
<p>At the completion of the course the student will be able to:</p> <ul style="list-style-type: none"> <li>• Understand management principles and concepts critical to be a successful manager</li> <li>• Understand current and historical engineering management theory and practice</li> <li>• Prepare effective plans and learn how to implement them</li> <li>• Generate alternatives to solve problems and communicate them effectively</li> <li>• Lead, organize and manage engineering teams while dealing with ambiguity as a manager</li> <li>• Adapt to change and prepare, equip and support individuals to successfully adopt change</li> </ul>	
<p><b>TEXTBOOK:</b> C.M. Chang, Engineering Management: Meeting the Global Challenges. 2<sup>nd</sup>. ed. CRC Press. 2016.*</p>	
<p>*This book is a classic with no up-to-date editions and remains as the top book in the subject.</p>	
<b>Course time frame and thematic outline:</b>	
	<b>TIME DISTRIBUTION</b>
<b>Theme</b>	<b>Face-to-Face</b>
<p><i>Module 1: Introduction to Management</i></p> <ul style="list-style-type: none"> <li>• Management and organizations</li> <li>• Management constraints and challenges</li> </ul>	5 hours
<p><i>Module 2: Management and leadership in engineering</i></p> <ul style="list-style-type: none"> <li>• Managerial issues</li> <li>• Planning, organizing, leading, controlling</li> <li>• Communication and teamwork</li> <li>• Change management</li> </ul>	9 hours

<i>Module 3: Accounting and Financial Information</i> <ul style="list-style-type: none"> <li>• Cost management</li> <li>• Managing financial resources</li> </ul>	6 hours
<i>Module 4: Project Management Principles</i> <ul style="list-style-type: none"> <li>• Project plan and scheduling</li> <li>• Human resources management, development, and motivation</li> </ul>	5 hours
<i>Module 5: Other Relevant Topics</i> <ul style="list-style-type: none"> <li>• Ethical and socially responsible engineering managers</li> <li>• Global setting challenges</li> </ul>	5 hours
Case Studies	8 hours
Project Presentation	2 hours
Quizzes	3 hours
Midterm and Final Exams	2 hours
<b>Total contact hours</b>	<b>45 hours</b> (45 face-to-face = 100%)

**INSTRUCTIONAL STRATEGIES:**

**Face-to-Face**

- ♦ Conferences
- ♦ Lectures
- ♦ Team work
- ♦ Individual tasks
- ♦ Assessment activities
- ♦ Practice activities
- ♦ Oral presentations

**MINIMUM OR REQUIRED RESOURCES AVAILABLE:**

<b>RESOURCE</b>	<b>FACE-TO-FACE</b>
Institutional learning management platform account (Ex. Moodle) (Cuenta en la plataforma institucional de gestión de aprendizaje) (Ej. Moodle)	Institution
Institutional email account	Institution
Computer with high-speed internet access or mobile device with data service	Student
Programs or applications: word processor, spreadsheets, presentation editor	Student
Built-in or external speakers	Not applicable
Webcam or mobile with camera and microphone	Not applicable

**EVALUATION STRATEGIES:**

**FACE to FACE**

<b>Strategy</b>	<b>Percentage Range</b>
Attendance and Participation	5-10%
Participation in collaborative presentations	5-10%
Oral presentations	15-25%
Case studies	20-25%
Project	10-15%
Quizzes	10-30%
Final exam	10-15%

**REASONABLE ACCOMMODATIONS:**

The University of Puerto Rico at Mayagüez (RUM) recognizes that each student has an inherited right to request reasonable accommodation according to Law 51: Law for Integral Educational Services for People with Disabilities. Every student has the right to receive reasonable accommodation if he/she presents the necessary evidence to be evaluated by the Office of Services to Students with Disabilities (OSEI-RUM), and the related information can be found at the following link: <https://www.uprm.edu/cms/index.php/page/85>. If your case is approved by OSEI-RUM, you will receive reasonable accommodation in your courses and evaluation, and you must contact each professor for course registered. For additional information contact OSEI-RUM at Sánchez Hidalgo 410 or via telephone 787-832-4040 extension 3107.

**ACADEMIC INTEGRITY:**

The University of Puerto Rico promotes the highest standards of academic and scientific integrity. Article 6.2 of the UPR Student General Bylaws (Board of Trustees Certification 13, 2009-2010) states that academic dishonesty includes, but is not limited to: fraudulent actions; obtaining grades or academic degrees by false or fraudulent simulations; copying the whole or part of the academic work of another person; plagiarizing totally or partially the work of another person; copying all or part of another person's answers to the questions of an oral or written exam by taking or having someone else take the exam on his/her behalf; as well as enabling and facilitating another person to perform the aforementioned behavior. Any of these behaviors will be subject to disciplinary action in accordance with the disciplinary procedure established by the UPR Student General Bylaws.—

To ensure the integrity and security of user data, all hybrid, distance and online courses must be offered through the institutional learning management platform, which uses secure connection and authentication protocols. The system authenticates the identity of the user (student and professor) using the username and password assigned by the institution. The users are responsible for keeping their password safe, protected, and not to share it with other people.

**POLICY AGAINST DISCRIMINATION BASED ON SEX, SEXUAL ORIENTATION, AND GENDER IDENTITY:**

«The University of Puerto Rico prohibits discrimination based on sex, sexual orientation, and gender identity in any of its forms, including that of sexual harassment. According to the Institutional Policy Against Sexual Harassment at the University of Puerto Rico, Certification 130 (2014-2015) from the Board of Governors, any student subjected to acts constituting sexual harassment, may turn to the Office of the Student Ombudsperson, the Office of the Dean of Students, or the Coordinator of the Office of Compliance with Title IX for an orientation or formal complaint».

**GRADING SYSTEM**

X Quantifiable (letters, A, B, C, D, F)  Not Quantifiable

**CONTINGENCY PLAN IN CASE OF AN EMERGENCY**

In case of an emergency or class interruption, the professor can apply Bylaw 19-85 of the UPRM. This bylaw states that up to 25% of a class can be offered online.

## **BIBLIOGRAPHY**

1. C.M. Chang, Engineering Management: Meeting the Global Challenges. 2<sup>nd</sup>. ed. CRC Press. 2016.\*
2. Stephen P. Robbins, Mary Coulter. Management. 14<sup>th</sup>. ed. Prentice Hall, 2018.
3. D.G. Newman, T.G. Eschenbach, J.P. Lavelle. Engineering Economic Analysis. 14<sup>th</sup>. ed. Oxford University Press. 2020.
4. D.R. Hansen, M.M. Mowen. Cornerstones of Cost Management, 4<sup>th</sup>. ed. Cengage. 2018.
5. W. Nickels, J. McHugh, S. McHugh. Understanding Business. 12<sup>th</sup>. ed. McGraw Hill. 2018.
6. P.D. Kimmel, J.J. Weygandt, D.E. Kieso, Accounting Principles. 12<sup>th</sup>. ed. Wiley. 2015.\*
7. H. Kerzner. Project Management. 12<sup>th</sup>. ed. Wiley. 2017

\*This book is a classic with no up-to-date editions and remains as the top book in the subject.