PONTIFICIA UNIVERSIDAD CATÓLICA DE CHILE
COLLEGE OF ENGINEERING
DEPARTMENT OF MECHANICAL AND METALLURGICAL ENGINEERING
ABET COURSE SYLLABI

ICM 2142 AEROSPACE SYSTEMS

Credits and contact hours:	10 credits / 10 hours (3 hours in lectures and 7 individual work hours per week)
Instructor's name:	Cristian Chavez
Course coordinator's name	Cristian Chavez
Textbook:	Fortescue, P., J. Stark & G. Swinerd Spacecraft Systems Engineering. 3ª Ed. Wiley, 2003. Sellers, J. Understanding Space: an Introduction to Astronautics. 2ª Ed. Mc Graw Hill, 2000.
Course Catalog Description:	Throughout this unit, students will acquire tools to create and manage a professional astronautical project, being able to understand and describe in detail the different subsystems of the spacecraft, including the ones related to communication. The unit has a "capstone" project focused on the design of a simple spacecraft prototype.
Prerequisite Courses:	ICM2132 Astronautics
Co-requisite Courses:	None
Status in the Curriculum:	Elective
Course Learning Outcomes:	1. Managing an astronautical Project. 2. Becoming aware of the need to have different subsystems for a correct operation of a spacecraft, and an efficient communication structure. 3. Applying the knowledge acquired in previous astronautical units in order to design and manage a low budget aerospace mission.
Relation of Course to ABET Criteria:	a. Knowledge of mathematics, science and engineering c. Design a system, component, or process e. Identify, formulate, and solve engineering problems f. Professional and ethical responsibility g. Effective communication h. Broad education necessary for global, economic, environmental and societal context i. Recognition of the need for, and an ability to engage in life-long learning j. Knowledge of contemporary issues

k. Techniques, skills, and modern tools for engineering practice.

Topics covered:

1. Aerospace Engineering challenges
2. Fundamentals of Aeronautics
3. Space Mission Engineering
4. Payload and spacecraft design
5. Launching and operations

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