

Program	09TT- Engineering in Telecommunication Technologies and Services
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Course number and name	
Number	95000007
Name	Vector analysis Análisis vectorial
Semester	Y1-S2

Credits and contact hours	
ECTS Credits	6
Contact hours	60

Coordinator's name	Raúl Cabanes Martínez
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Specific course information		
Description of course content		
A course in the calculus of several variables, continuity and limits; differentiation; maxima and minima; elementary functions; multiple, line and surface integration; integral theorems		
List of topics to be covered		
1. Geometry on curves and surfaces. 2. R_n to R_m functions: limits and continuity. 3. Differentiability and maxima and minima. 4. Double and triple integrals. 5. Line and surface integrals. 6. Stokes and Gauss theorems. 7. Conservative, solenoid and harmonic fields		
Prerequisites or co-requisites		
None		
Course category in the program		
<input checked="" type="checkbox"/> R (required)	<input type="checkbox"/> E (elective)	<input type="checkbox"/> SE (selective elective)

Specific goals for the course
Specific outcomes of instruction
RA32: To realize the importance of abstract reasoning and the need to translate problems in engineering into mathematical formulations.
RA33: To understand the advantage and the scope of the mathematical language in the description of technical problems.
RA38: To achieve dexterity in the calculus and the use of real functions in one or several variables.
RA40: To be proficient in the differential and integral calculus of functions

RA41: To learn the meaning of vector operators and its physical applications.
 RA42: To apply integral theorems to engineering problems.

Student outcomes addressed by the course

CEB1,CEB4
 CG1, CG2, CG4, CG5

Bibliography and supplemental materials

- R. Larson y B. H. Edwards. Cálculo II. Novena edición. McGraw-Hill
- S. L. Salas, E. Hille y G. J. Etgen. Cálculus. Una y Varias Variables. 4ª ed. Volumen 2. Reverté
- J. E. Marsden y A. J. Tromba. Cálculo Vectorial. Addison-Wesley
- Juan de Burgos. Cálculo Infinitesimal de Varias Variables. McGraw-Hill
- A. García, A. López, G. Rodríguez, S. Romero, A. de la Villa. Cálculo II. Teoría y problemas de funciones de varias variables. Clagsa
- J. Rogawski. Cálculo de varias variables. Reverté

Teaching methodology

<input checked="" type="checkbox"/> lectures	<input checked="" type="checkbox"/> problem solving sessions	<input checked="" type="checkbox"/> collaborative actions	<input type="checkbox"/> laboratory sessions
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Other: