Course Syllabus

SINGLE VARIABLE CALCULUS

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Program: Oceanographic Engineering

1. Course number and name
MATG1045 - SINGLE VARIABLE CALCULUS

2. Credits and contact hours
3 credits and 5 contact hours

3. Instructor's course or coordinator's name
GUILLERMO ALEJANDRO BAQUERIZO PALMA

4. Text book, tittle, author, and year
• Edwin Purcell, Dale Varberg y Steven Rigdon. CÁLCULO (Novena edición)

a.Other supplemental materials

• Spivak, M. Calculus (3era edición)

• LARSON AND EDWARDS. CÁLCULO DE UNA VARIABLE (Perfect Paperback; 1900-01-01)

• Larson, Ron. Cálculo - Tomo I (Décima Edición)

5. Specific course information
a. Brief description of the content of the course (catalog description)

It is a core transversal course for Engineering and Social Sciences and Humanities, students. Topics, such as, topological notions, limits and continuity of real variable functions, derivatives and their applications, antiderivatives and integration techniques, and the definite integral with its applications, are examined. This course is aimed to the development of student's skills and know-how in the derivation and integration processes, as a fundamental basis for the following upper level courses in its academic training process.

b. This course is: Required

6. Specific goals for the course
a. Specific outcomes of instruction

1.- Apply topological notions to the limits' calculation and continuity analysis.

2.- Analyze real variable functions' behavior using limits, continuity and derivability conditions.

3.- Interpret solutions about approximation problems, rate of change and extreme values, using differential calculus.

4.- Get antiderivatives by using integration techniques.

5.- Solve problems of calculation of areas, arc lengths and volumes; using the definite integral.

b. Explicity indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course

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7. Brief list of topics to be covered

1.- Evaluation activities

2.- Limits and continuity

3.- Derivatives and their applications

4.- Antiderivatives and integration techniques

5.- Definite integral and its applications