



Date:	<b>REGISTRATION OF COURSES</b>	RESPONSIBLE OF REGISTRATION:
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AREA OF KNOWLEDGE	SUB-AREA	UNDERGRADUATE	POSTGRADUATE
<b>BASIC SCIENCES</b>			
ECONOMICS AND SOCIAL SCIENCES			
<b>HEALTH SCIENCES</b>			
<b>ENGINEERING, ARCHITECTURE AND TECHNOLOGY</b>	<b>Architecture</b>	<b>X</b>	
<b>EDUCATION SCIENCES</b>			
HUMANITIES AND ARTS			
<b>AGRICULTURAL AND SEA SCIENCES</b>			
<b>MILITARY ARTS AND SCIENCES</b>			
SAFETY AND CIVIL PROTECTION			
<b>INTERDISCIPLINARY</b>			
<b>OTHERS</b>			

**ADSCRIPTION OR BRANCH (ES):**

FACULTY	ARCHITECTURE AND URBANISM
SCHOOL	ARCHITECTURE
INSTITUTE	
DEPARTMENT	METHODS SECTOR
OTHERS	

**COURSE:**

NAME	MATHEMATICS II (96)
CODE	1042
EXECUTIVE UNIT	
CLASSIFICATION	COMPULSORY / THEORETICAL - PRACTICAL
APPROVAL DATE	
UPDATE DATE	
APPROVAL AUTHORITY	
CREDIT UNITS	4 (FOUR)
HOURS/WEEK	6 (SIX)
REGIMEN	SEMI-ANNUAL
ACADEMIC PERIODS	
REQUIREMENTS	MATHEMATICS I
PROFESSOR	MATHEMATICS AREA PROFESSORS



## PURPOSES

Create in the student skills and abilities in the study of differential and integral calculus and its applications to architecture.

## LEARNING OBJECTIVES

That the student would be able to:

- Apply the knowledge structure regarding the derivative in the solving practical problems: study of the behaviour of functions through its graphing and resolution of optimization problems.
- Calculate indefinite and definite integrals.
- Determine areas and volumes through the integral calculus.



## CONTENTS

### 1. DERIVATIVES APPLICATION:

- L'Hopital's rule
- Maximums and minimums. Critical points. Inflexion points.
- Curve tracing through study of the first and second derivative
- Optimization problems

### 2. INDEFINITE INTEGRAL:

- Definition
- Constant of integration
- Integration methods: Substitution method and integration by parts.
- Integration tables

### 3. DEFINITE INTEGRAL:

- Geometric interpretation
- Definition
- Properties
- Fundamental theorem of integral calculus
- Improper integrals

### 4. DEFINITE INTEGRAL APPLICATIONS:

- Area of plane regions
- Volume
- Surface of revolution



### **INSTRUCTIONAL MEDIA**

- Conventional media

### **EVALUATION**

- Course evaluation consists of 3 partial exams.
- Final and make-up exams are prepared in the Sector by the professors of the area.

### **TEXTBOOKS (If possible, according to contents)**

- **GUIDE TEXT:**

LARSON, HOSTETLER AND EDWARDS. CALCULUS. Volume 1. 6th EDITION.