



Electronic Materials	• Blackboard @psau.edu.sa
Other Learning Materials	Paul's Online Series

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Classrooms with seating facilities for at least 30 students
Technology equipment (projector, smart board, software)	<ul style="list-style-type: none"> Providing classrooms with smart boards and data show
Other equipment (depending on the nature of the specialty)	N A

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of Teaching	Students Peer Review/Class Room Observation	Indirect
Effectiveness of students assessment	Independent member teaching staff	Check marking by an independent member teaching staff of samples of student work.
Quality of learning resources	Students Faculty Member	Indirect Direct
The extent to which CLOs have been achieved	Quality Unit of College and DDQ	Learning outcomes assessment.
Other		

Assessor (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify))

Assessment Methods (Direct, Indirect)

G. Specification Approval Data

COUNCIL /COMMITTEE	
REFERENCE NO.	
DATE	OCT 2023





C. Course Content

No	List of Topics	Contact Hours
1.	Indefinite Integrals and Techniques of Integration	8
2.	Trigonometric Integrals	6
3.	Integration by Partial Fractions, Integration by parts, Completing Square	8
4.	Reduction Formula, Definite Integrals	8
5.	Applications : Areas, Arc Length	8
6.	Volumes of Revolution, Numerical Integration	6
7.	Parametric Equations, Polar Coordinates, Areas in Polar Coordinates	6
8.	Indeterminate forms and Improper Integrals	6
Total		56

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Mid Term Exam 1	8	20%
2.	Quiz – Atleast two quiz	5, 12	10%
3.	Homework / Assignment	-	10%
4.	Continuous Assessment -Activities	During the Semester	10%
5.	End Semester Exam (50%)	13	50%

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.)

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References
Supportive References

- Integral Calculus 1060 for PYP

- Stewart, James. *Single Variable Calculus-Early Transcendental*. (2011).
- Lang, Serge. *A first course in calculus*. Springer Science & Business Media, ISBN-0387962018
- Anton, Howard, Irl C. Bivens, and Stephen Davis. *Calculus: Early Transcendentals*. John Wiley & Sons, 2021



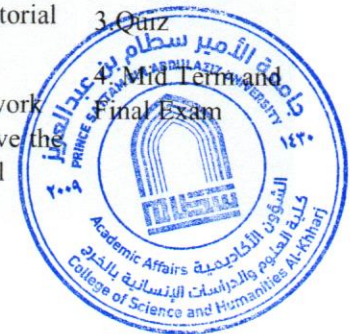


2. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures 3*14	42
2.	Laboratory/Studio	
3.	Field	
4.	Tutorial 1*14	14
5.	Others (specify) – Office hours – Weekly 5 hours	70*
Total		126

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	Knowledge and understanding			
1.1	Gain knowledge about various techniques of Integration such as integration by substitution, Integration by parts, Integration by splitting a function into partial fractions, reduction formula and be able to define the scientific background of Integration.	K1	1. Class Room Lectures. 2. Interactive sessions. 3. Exclusive office hours for clearing doubts in small groups.	1. Two Internal Exams. 2. At least two Quiz. 3. End Semester Exam.
2.0	Skills			
2.1	Solve problems applying techniques of integration and evaluate area, volume and length of arc in Cartesian as well as polar coordinate system	S1	1. Application oriented exercises during tutorial session.	1.Homework 2.Assignments 3.Quiz
2.2	Compute Area of Surfaces and Volume of Solids using Integration	S2	2.Homework to improve the analytical skills	4. Mid Term and Final Exam





A. General information about the course:

Course Identification

1. Credit hours: 3 (3,1,0)

2. Course type

a. University College Department Track Others

b. Required Elective

3. Level/year at which this course is offered:

4. Course general Description

Integration: Indefinite Integrals – Techniques of Integration: Trigonometric Integrals – Integration by Inverse Substitution – Completing the Square – Partial Fractions – Integration by Parts – Reduction Formulas – Definite Integrals – Arc length – Surface Area – Areas between Curves – Volumes of Revolution – Numerical Integration – Parametric Equations – Polar Coordinates – Area in Polar Coordinates – Indeterminate Forms – Improper Integrals

5. Pre-requirements for this course (if any): Math 1050

6. Co- requirements for this course (if any):

None

7. Course Main Objective(s)

The main objective of this course is to provide students with a strong foundation in mathematical concepts regarding Integral Calculus and its applications and equip them to take up various courses in Mathematics at various levels of study in their future colleges.

1. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1.	Traditional classroom	4	100
2.	E-learning	In case of any unforeseen circumstances.	
	Hybrid		
3.	<ul style="list-style-type: none"> Traditional classroom E-learning 		
4.	Distance learning	Blackboard	





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T-104
2022

Course Specification

Course Title: **Integral Calculus**

Course Code: **MATH 1060**

Program: **B Sc**

Department: **Mathematics**

College: **Science and Humanities**

Institution: **Prince Sattam Bin Abdulaziz University**

Version: **3**

Last Revision Date: **Oct 2023**

