

AMERICAN INTERNATIONAL UNIVERSITY-BANGLADESH (AIUB)  
Faculty of Science and Technology (FST)  
Department of Mathematics  
Undergraduate Program

**COURSE PLAN**

**Summer 2019-2020**

I. Course Core and Title

**Mat 1205: Integral Calculus and Ordinary Differential Equations**

II. Credit

**3 credit hours (3 hours of theory per week)**

III. Nature

**Core Course for CS, EEE**

**Mid Term**

<b>TOPICS</b>	<b>Specific Objective(s)</b>
Indefinite integrals	Introduction, standard integrals, integration by substitution.
Definite integrals	Riemann sum, fundamental theorem of calculus, definite integrals and its properties, numerical integration by Trapezoidal rule and application.
Application of integration	Area between two curves in Cartesian and polar coordinates. Volume of a solid obtained by rotation, center of mass.
Improper integrals	Introduction. Beta function and Gamma function.
Methods of Integration	Integration by parts, integration of trigonometric functions, rational and irrational functions, integration by trigonometric substitution.

**Marks distribution**

<b>Attendance:</b>	<b>10</b>
<b>Performance:</b>	<b>10</b>
<b>Quiz:</b>	<b>60</b>
<b>Viva:</b>	<b><u>20</u></b>
<b>Total:</b>	<b>100</b>