

**TEACHING PLAN**  
**SBMS COLLEGE, SUALKUCHI**  
**Session: 2022-23**

<b>Department:</b>	<b>Mathematics</b>	<b>Semester</b>	<b>I</b>
<b>Course:</b>	<b>Honours</b>	<b>Paper No:</b>	<b>MAT-HC-1016</b>
<b>Credit:</b>	<b>6</b>	<b>Marks:</b>	<b>100(80+20)</b>

<b>Paper : I, Paper Name: Calculus</b>				
<b>Unit</b>	<b>Course Content</b>	<b>Allotted to</b>	<b>Hours</b>	<b>Month</b>
I	Hyperbolic Functions, L'Hospital Rule	K.Baishya	15Hrs	Aug(2-25)
II	Reduction Formula, area of surface revolution	C .K. Uzir.	16 Hrs	Aug(16-29)
III	Tangent and normal component of acceleration, Keplers law	K. Baishya.	10 Hrs	Aug26-Sept.10
III	Triple product, vector functions	K. Sarma.	10Hrs	Aug(1-18)
IV	Practical	K. Baishya	15 Hrs	Sept.12-Oct.10

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<b>Department:</b>	<b>Mathematics</b>	<b>Semester</b>	<b>I</b>
<b>Course:</b>	<b>Honours</b>	<b>Paper No:</b>	<b>MAT-HC-1026</b>
<b>Credit:</b>	<b>6</b>	<b>Marks:</b>	<b>100(80+20)</b>

<b>Paper : II Paper Name : Algebra</b>				
<b>Unit</b>	<b>Course Content</b>	<b>Allotted to</b>	<b>Hours</b>	<b>Month</b>
I	Polar representation of complex number, De Moivre's theorem etc.	K. Baishya	15Hrs	Sept.(12-28)
II	Statement and logic, etc.	C.K.Uzir	16 Hrs	Sept.10-Oct5
III	System of linear equations etc.	K. Sarma	20 Hrs	Aug 14-Sept28

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<b>Department:</b>	<b>Mathematics</b>	<b>Semester</b>	<b>I</b>
<b>Course:</b>	<b>Regular</b>	<b>Paper No:</b>	<b>MAT-RC-1016</b>
<b>Credit:</b>	<b>6</b>	<b>Marks:</b>	<b>100(80+20)</b>

**Paper: 1**

**Paper Name: Calculus**

<b>Unit</b>	<b>Course Content</b>	<b>Allotted to</b>	<b>Hours</b>	<b>Month</b>
I	Graphs and logarithmic functions	K. Baishya	8 Hrs	Aug(2-15)
II	Limit and continuity	C .K. Uzir.	6 Hrs	Aug(2-14)
III	Differentiability, Leibnitz Theorem	K. Baishya.	15 Hrs	Aug17-Sept.05
IV	Rolle's theorem	K. Sarma.	20Hrs	Aug16-Sept10
V	Functions of two or more variables, Partial differentiation	K.Baishya	15 Hrs	Sept.06-Oct.10

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<b>Department:</b>	<b>Mathematics</b>	<b>Semester</b>	<b>III</b>
<b>Course:</b>	<b>Honours</b>	<b>Paper No:</b>	<b>MAT-HC-3016</b>
<b>Credit:</b>	<b>6</b>	<b>Marks:</b>	<b>100(80+20)</b>

<b>Paper:1</b>					
<b>Paper Name: Theory of real Functions</b>					
<b>Unit</b>	<b>Course Content</b>	<b>Allotted to</b>	<b>Marks</b>	<b>Hours</b>	<b>Month</b>
I	Cluster point etc	C. K. Uzir.	15	16Hrs	Aug(2-30)
II	Continuous function etc.	C .K. Uzir.	20	26 Hrs	Sept(2-30)
III	Differentiability etc.	K. Sarma	15	16 Hrs	Aug(2-30)
IV	L'Hospital Rule etc.	K. Baishya	15	16Hrs	Aug(2-20)

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<b>Department:</b>	<b>Mathematics</b>	<b>Semester</b>	<b>III</b>
<b>Course:</b>	<b>Honours</b>	<b>Paper No:</b>	<b>MAT-HC-3026</b>
<b>Credit:</b>	<b>6</b>	<b>Marks:</b>	<b>100(80+20)</b>

<b>Paper:II , Paper Name: Group Theory-I</b>				
<b>Unit</b>	<b>Course Content</b>	<b>Allotted to</b>	<b>Hours</b>	<b>Month</b>
I	Symmetries of a square etc.	C. K. Uzir.	12Hrs	Aug(05-30)
II	Cycle notation for permutations etc.	C .K. Uzir.	16 Hrs	Sept(2-15)
II	Lagrange's Theorem etc.	K. Baishya	12 Hrs	Aug 20-Sept.05
III	Group homomorphism etc.	K. Baishya	17Hrs	Sept(06-30)

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<b>Department:</b>	<b>Mathematics</b>	<b>Semester</b>	<b>III</b>
<b>Course:</b>	<b>Honours</b>	<b>Paper No:</b>	<b>MAT-HC-3036</b>
<b>Credit:</b>	<b>6</b>	<b>Marks:</b>	<b>100(80+20)</b>

<b>Paper :III, Paper Name: Analytical Geometry</b>				
<b>Unit</b>	<b>Course Content</b>	<b>Allotted to</b>	<b>Hours</b>	<b>Month</b>
I	Transformation of coordinates, tangent Normal etc.	K.Baishya	25 Hrs	Sept.2-Oct25
II	Plane shortest distance etc,	K. Sarma.	10Hrs	Sept.1-25
II	Sphere cone etc.	C K Uzir	18Hrs	Sept10-Oct. 12

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<b>Department:</b>	<b>Mathematics</b>	<b>Semester</b>	<b>III</b>
<b>Course:</b>	<b>Regular</b>	<b>Paper No:</b>	<b>MAT-RC-3016</b>
<b>Credit:</b>	<b>6</b>	<b>Marks:</b>	<b>100(80+20)</b>

<b>Paper :I      Paper Name : Differential Equations</b>				
<b>Unit</b>	<b>Course Content</b>	<b>Allotted to</b>	<b>Hours</b>	<b>Month</b>
I	First order Ordinary Differential Equations	K. Baishya	25 Hrs	Aug2-Sept.10
II	Second Order Linear Differential Equations	K. Baishya	20Hrs	Sept11-Oct20

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<b>Department:</b>	<b>Mathematics</b>	<b>Semester</b>	<b>V</b>
<b>Course:</b>	<b>Honours</b>	<b>Paper No:</b>	<b>MAT-HC-5016</b>
<b>Credit:</b>	<b>6</b>	<b>Marks:</b>	<b>100(80+20)</b>

<b>Paper :I      Paper Name : Complex Analysis</b>				
<b>Unit</b>	<b>Course Content</b>	<b>Allotted to</b>	<b>Hours</b>	<b>Month</b>
I	Properties of Complex Numbers etc.	K. Baishya	08 Hrs.	Aug(02-16)
II	Analytical functions etc.	K. Baishya	7 Hrs.	Aug(17-26)
III	Contours etc.	K. Baishya	8 Hrs	Aug. 27- Sept.08
IV	Antiderivatives etc.	K.Baishya	12 Hrs.	Sept09-25
V	Practical	K. Baishya	10 Hrs.	Sept26-Oct25



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<b>Department:</b>	<b>Mathematics</b>	<b>Semester</b>	<b>V</b>
<b>Course:</b>	<b>Major</b>	<b>Paper No:</b>	<b>MAT-HC-5026</b>
<b>Credit:</b>	<b>6</b>	<b>Marks:</b>	<b>100(80+20)</b>

<b>Paper :II, Paper Name : Linear Algebra</b>				
<b>Unit</b>	<b>Course Content</b>	<b>Allotted to</b>	<b>Hours</b>	<b>Month</b>
I	Vector spaces and subspaces etc.	C.K.Uzir	12 Hrs	Aug2-.18
II	Eigenvectors and eigenvalues etc	C. K. Uzir	14Hrs	Aug 19-Sept12
III	Inner Product etc.	C. K. Uzir	22Hrs	Sept. 13-Oct.18

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<b>Department:</b>	<b>Mathematics</b>	<b>Semester</b>	<b>V</b>
<b>Course:</b>	<b>Honours</b>	<b>Paper No:</b>	<b>MAT-HE-5116</b>
<b>Credit:</b>	<b>6</b>	<b>Marks:</b>	<b>100(80+20)</b>

<b>Paper : III, Paper Name : Number Theory</b>				
<b>Unit</b>	<b>Course Content</b>	<b>Allotted to</b>	<b>Hours</b>	<b>Month</b>
I	Linear Diophantine equation etc.	C .K. Uzir	24 Hrs	Aug20-Sept.18
II	Number Theoretic functions etc.	C. K. Uzir	25Hrs	Sept19-Oct20

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<b>Department:</b>	<b>Mathematics</b>	<b>Semester</b>	<b>V</b>
<b>Course:</b>	<b>Honours</b>	<b>Paper No:</b>	<b>MAT-HE-5066</b>
<b>Credit:</b>	<b>6</b>	<b>Marks:</b>	<b>100(80+20)</b>

<b>Paper : IV, Paper Name: Programming in C</b>				
<b>Unit</b>	<b>Course Content</b>	<b>Allotted to</b>	<b>Hours</b>	<b>Month</b>
I	Variables, functions etc	K. Baishya	14 Hrs	Aug(2-20)
II	Control Statements etc	K. Sarma.	12Hrs	Aug 2-16
III	Arrays and Subscripted variables etc	K. Sarma	14Hrs	Aug (17-30)
IV	Practical	K. Baishya	14Hrs	Aug21-Oct 15

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<b>Department:</b>	<b>Mathematics</b>	<b>Semester</b>	<b>V</b>
<b>Course:</b>	<b>Regular</b>	<b>Paper No:</b>	<b>MAT-RE-5116</b>
<b>Credit:</b>	<b>6</b>	<b>Marks:</b>	<b>100(80+20)</b>

<b>Paper: I, Paper Name: Number Theory</b>				
<b>Unit</b>	<b>Course Content</b>	<b>Allotted to</b>	<b>Hours</b>	<b>Month</b>
I	Linear Diophantine equation etc	C. K. Uzir	20 Hrs	Aug(2-30)
II	Number theoretic functions etc	C. K. Uzir	25Hrs	Sept.1-Oct10

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<b>Department:</b>	<b>Mathematics</b>	<b>Semester</b>	<b>II</b>
<b>Course:</b>	<b>Honours</b>	<b>Paper No:</b>	<b>MAT-HC-2016</b>
<b>Credit:</b>	<b>6</b>	<b>Marks:</b>	<b>100(80+20)</b>

<b>Paper:I, Paper Name: Real Analysis</b>				
<b>Unit</b>	<b>Course Content</b>	<b>Allotted to</b>	<b>Hours</b>	<b>Month</b>
I	Algebraic and order properties etc	C.K Uzir	15Hrs	Feb.(2-18)
II	Real sequences etc.	K. Sarma	18 Hrs	Feb.(2- 28)
III	Infinite series etc	K. Baishya	20 Hrs	Feb.(1-28)

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<b>Department:</b>	<b>Mathematics</b>	<b>Semester</b>	<b>II</b>
<b>Course:</b>	<b>Honours</b>	<b>Paper No:</b>	<b>MAT-HC-2026</b>
<b>Credit:</b>	<b>6</b>	<b>Marks:</b>	<b>100(80+20)</b>

<b>Paper: II      Paper Name : Differential Equations</b>				
<b>Unit</b>	<b>Course Content</b>	<b>Allotted to</b>	<b>Hours</b>	<b>Month</b>
I	Origin of ordinary differential equation and mathematical model	K.Baishya	18Hrs	Feb.(2-28)
II	Introduction to Compartmental model etc	K.Baishya	15 Hrs	March 1-18
III	Homogenous Equations etc	K.Baishya	16 Hrs	March19-April8

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<b>Department:</b>	<b>Mathematics</b>	<b>Semester</b>	<b>II</b>
<b>Course:</b>	<b>Regular</b>	<b>Paper No:</b>	<b>MAT-RC-2016</b>
<b>Credit:</b>	<b>6</b>	<b>Marks:</b>	<b>100(80+20)</b>

<b>Paper: I, Paper Name: Algebra</b>				
<b>Unit</b>	<b>Course Content</b>	<b>Allotted to</b>	<b>Hours</b>	<b>Month</b>
I	Theory of Equations	K. Sarma	20Hrs	Feb.(2-28)
II	Matrices	C.K. Uzir	20Hrs	Feb.(2-28)
III	Groups, Rings	C.K. Uzir	20 Hrs	March(01-30)

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<b>Department:</b>	<b>Mathematics</b>	<b>Semester</b>	<b>IV</b>
<b>Course:</b>	<b>Major</b>	<b>Paper No:</b>	<b>MAT-HC-4016</b>
<b>Credit:</b>	<b>6</b>	<b>Marks:</b>	<b>100(80+20)</b>

<b>Paper :I, Paper Name: Multivariate Calculus</b>				
<b>Unit</b>	<b>Course Content</b>	<b>Allotted to</b>	<b>Hours</b>	<b>Month</b>
I	Function of several variables, etc.	K. Baishya	18 Hrs	Feb.(2-28)
II	Extrema of functions of two variables	K. Baishya	16 Hrs	March 1-22
III	Double Integration etc	K Baishya	10 Hrs	Mar.23-April13
IV	Line Integral etc	K. Baishya	12 Hrs	April14-May 10



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<b>Department:</b>	<b>Mathematics</b>	<b>Semester</b>	<b>IV</b>
<b>Course:</b>	<b>Major</b>	<b>Paper No:</b>	<b>MAT-HC-4026</b>
<b>Credit:</b>	<b>6</b>	<b>Marks:</b>	<b>100(80+20)</b>

<b>Paper:II, Paper Name: Numerical Methods</b>				
<b>Unit</b>	<b>Course Content</b>	<b>Allotted to</b>	<b>Hours</b>	<b>Month</b>
I	Algorithms etc.	K. Sarma	20Hrs	Feb.02-28
II	Interpolation formula	K. Sarma	10Hrs	March 1-15
III	Numerical Differentiation	K.Sarma	10Hrs	March13- April08
IV	Practical	K. Baishya	10 Hrs	March15-April 14

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<b>Department:</b>	<b>Mathematics</b>	<b>Semester</b>	<b>IV</b>
<b>Course:</b>	<b>Honours</b>	<b>Paper No:</b>	<b>MAT-HC-4036</b>
<b>Credit:</b>	<b>6</b>	<b>Marks:</b>	<b>100(80+20)</b>

<b>Paper: III, Paper Name : Ring Theory</b>				
<b>Unit</b>	<b>Course Content</b>	<b>Allotted to</b>	<b>Hours</b>	<b>Month</b>
I	Definition and examples of ring etc	C. K. Uzir	20Hrs	Feb.(2-28)
II	Polynomial ring etc	C.K. Uzir	20Hrs	March01- April05

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<b>Department:</b>	<b>Mathematics</b>	<b>Semester</b>	<b>IV</b>
<b>Course:</b>	<b>Regular</b>	<b>Paper No:</b>	<b>MAT-RC-4016</b>
<b>Credit:</b>	<b>6</b>	<b>Marks:</b>	<b>100(80+20)</b>

<b>Paper: I, Paper Name: Real Analysis</b>				
<b>Unit</b>	<b>Course Content</b>	<b>Allotted to</b>	<b>Hours</b>	<b>Month</b>
I	Order completeness of Real Numbers etc.	C.K.Uzir	20Hrs	Feb 2- March 12
II	Sequences, Leibnitz Test, Conditional convergence etc	K Baishya	25Hrs	Feb 5-March 24

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<b>Department:</b>	<b>Mathematics</b>	<b>Semester</b>	<b>VI</b>
<b>Course:</b>	<b>Honours</b>	<b>Paper No:</b>	<b>M-6016</b>
<b>Credit:</b>	<b>6</b>	<b>Marks:</b>	<b>100(80+20)</b>

<b>Paper :I ,                      Paper Name: Riemann Integration and Metric spaces</b>				
<b>I</b>	Riemann Integration, Gamma functions etc	K. Sarma	20 Hrs	Feb(02-28)
<b>II</b>	Metric Spaces etc.	K. Srama	15 Hrs	Mar(01-18)
<b>III</b>	Continuous mappings etc	K. Sarma	17 Hrs	Mar.19- April04

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<b>Department:</b>	<b>Mathematics</b>	<b>Semester</b>	<b>VI</b>
<b>Course:</b>	<b>Honours</b>	<b>Paper No:</b>	<b>MAT-HC-6026</b>
<b>Credit:</b>	<b>6</b>	<b>Marks:</b>	<b>100(80+20)</b>

<b>Paper :II, Paper Name: Partial Differential Equations</b>				
<b>Unit</b>	<b>Course Content</b>	<b>Allotted to</b>	<b>Hours</b>	<b>Month</b>
I	Introduction , Classification of first order PDE etc	K. Baishya	18 Hrs	Feb (2-25)
II	Canonical form etc	K. Baishya	12 Hrs	Feb 25- Mar.12
III	The Vibrating string etc	K Baishya	12Hrs	March13- April02
IV	Reduction to Canonical form	K. Baishya	08Hrs	Apr.(03-12)
V	Practical	K. Baishya	10 Hrs	April(12-30)

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<b>Department:</b>	<b>Mathematics</b>	<b>Semester</b>	<b>VI</b>
<b>Course:</b>	<b>Honours</b>	<b>Paper No:</b>	<b>MAT-HE-6426</b>
<b>Credit:</b>	<b>6</b>	<b>Marks:</b>	<b>100(80+20)</b>

<b>Paper :III, Paper Name: Group Theory II</b>				
<b>Unit</b>	<b>Course Content</b>	<b>Allotted to</b>	<b>Hours</b>	<b>Month</b>
I	Isomorphism etc	C.K. Uzir	12 Hrs	Feb (2-14)
II	Normal subgroups, etc	C.K. Uzir	12 Hrs	Feb (15-28)
III	Conjugacy classes etc	C.K. Uzir	12Hrs	March10-April 5
IV	Finite simple group etc.	C.K. Uzir	12Hrs	April(6-13)

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<b>Department:</b>	<b>Mathematics</b>	<b>Semester</b>	<b>VI</b>
<b>Course:</b>	<b>Honours</b>	<b>Paper No:</b>	<b>MAT-HE-6086 (Project Paper)</b>
<b>Credit:</b>	<b>6</b>	<b>Marks:</b>	<b>100</b>

## **PROJECT**

<b>Unit</b>	<b>Course Content</b>	<b>Allotted to (Student Name)</b>	<b>Marks</b>
I	A Fundamental Study on Introduction to PDE	K.Baishya (Bhaskar Das )	100
II	A Theoretical Study of Dynamical System	K Baishya (Bitumoni Baishya)	100
III	A Brief Study On Charpit's Method	K Baishya (Chintu Moni Malakar)	100
IV	A Study on Jacobi's Method	K. Baishya (Brajn Das)	100
V	A Fundamental Study to Jacobi's Method	K. Baishya (Dhritu Raj Das)	100
VI	A Theoretical Approach to Charpit's Method	K Baishya (Dipankar Das)	100
VII	A Study on Cauchy's Problem	K Baishya (Dipjyoti Bharali )	100
VIII	A Theoretical Approach to Cauchy's Problem	K Baishya ( Hirakjyoti Baishya)	100
IX	Introduction to History of Cauchy's Problem	K Baishya (Pabitra Kalita)	100
X	A Study on Cauchy's Problem for 1 <sup>st</sup> Order PDE	K Baishya (Pragyan Kalita)	100
XI	A Brief Study on Dynamical System	K. Baishya (Sobnom Sahnaj)	100
XII	A Brief Study On Charpit's Method	K Baishya (Subarna Jyoti Bharali)	100

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<b>Course:</b>	<b>Regular</b>	<b>Paper No:</b>	<b>MAT-RE-6116</b>
<b>Credit:</b>	<b>6</b>	<b>Marks:</b>	<b>100(80+20)</b>

<b>Paper : I      Paper Name: Numerical Analysis</b>				
<b>Unit</b>	<b>Course Content</b>	<b>Allotted to</b>	<b>Hours</b>	<b>Month</b>
I	Gaussian elimination method etc	C.K Uzir	12 Hrs	Feb (2-20)
I	Gregory-Newton forward and backward interpolation formula etc.	K. Baishya	12 Hrs	Feb(04-20)
II	Numerical Differentiation etc	K Sarma	10 Hrs	Feb(06-22)
II	Numerical Integration etc	C. K. Uzir	10 Hrs	Feb20-Mar.09
II	Ordinary Differential Equation: Euler's Method etc	K Baishya	12 Hrs	Feb 22-Mar15