

ശ്ലോക ലക്ഷണവിധി  
(സ്കൂൾ)  
മംഗളൂർ- 575 003



ST ALOYSIUS COLLEGE  
(Autonomous)  
P.B.No.720  
MANGALURU- 575 003, INDIA  
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Website: [www.staloyisius.edu.in](http://www.staloyisius.edu.in)

Re-accredited by NAAC with 'A' Grade - CGPA 3.62

Recognised by UGC as "College with Potential for Excellence"

College with 'STAR STATUS' conferred by DBT, Government of India

3<sup>rd</sup> Rank in "Swacch Campus" Scheme, by MHRD, Govt of India

No: SAC 40/Syllabus 2019-20

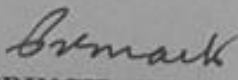
Date: 18-07-2019

### NOTIFICATION

Sub: Syllabus of **B.Sc. Physics** under Choice Based Credit System.

- Ref: 1. Decision of the Academic Council meeting held on 02-05-2019 vide  
Agenda No: 23(2019-20)  
2. Office Notification dated 18-07-2019

Pursuant to the above, the Syllabus of **B.Sc. Physics** under Choice Based Credit System which was approved by the Academic Council at its meeting held on 02-05-2019 is hereby notified for implementation with effect from the academic year **2019-20**.

  
PRINCIPAL



  
REGISTRAR

To:

1. The Chairman/Dean/HOD.
2. The Registrar Office
3. Library

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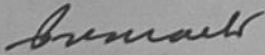
Date: 25-06-2020

### NOTIFICATION

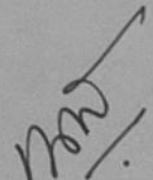
Sub: Syllabus of **B.Sc. Physics** under Choice Based Credit System.

- Ref: 1. Decision of the Academic Council meeting held on 09-06-2020 vide  
Agenda No: 15(2020-21)  
2. Office Notification dated 25-06-2020

Pursuant to the above, the replacement of CBCS IV Semester to Syllabus of **B.Sc. Physics** under Choice Based Credit System which was approved by the Academic Council at its meeting held on 09-06-2020 is hereby notified for implementation with effect from the academic year 2020-21.

  
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### Objectives:

The goal of this course in physics is to provide the student with a flavor of the physical principles of this science, to empower them to think critically and to provide insights to students in the physical sciences in order to enhance their career opportunities.

### COURSE STRUCTURE

Semester & Course Code	Lecture/ Practical per week (Hr)	Duration of Exam (Hr)	Max. Marks			Credits
			Internal assessment	End Semester Exam	Total	
I Sem G501.1 (Theory)	4	3	20	80	100	2
G501.1P (Practical)	3	3	10	40	50	1
<b>G501.1E (Open Elective)</b>	2	2	10	40	50	1
II Sem G501.2 (Theory)	4	3	20	80	100	2
G501.2P (Practical)	3	3	10	40	50	1
<b>G501.2E (Open Elective)</b>	2	2	10	40	50	1
III Sem G501.3 (Theory)	4	3	20	80	100	2
G501.3P (Practical)	3	3	10	40	50	1
<b>G501.3E (Open Elective)</b>	2	2	10	40	50	1
IV Sem G501.4 (Theory)	4	3	20	80	100	2
G501.4P (Practical)	3	3	10	40	50	1
<b>G501.4E (Open Elective)</b>	2	2	10	40	50	1
V Sem G501.5a (Theory)	3	3	20	80	100	2
G501.5b (Theory)	3	3	20	80	100	2
G501.5P (Practical)	4	3	20	80	100	2
VI Sem G501.6a (Theory)	3	3	20	80	100	2
G501.6b (Theory)	3	3	20	80	100	2
G501.6P (Practical)	4	3	20	80	100	2

**Title of the papers with Code:**

Semesters	Code	Paper Title
I	G501.1	Properties of matter, Thermal Physics and Electricity I
	G501.1P	Practical I
	<b>G501.1E</b>	<b>ELECTRICAL CIRCUITS AND NETWORK SKILLS</b>
II	G501.2	Mechanics, Relativity and Photonics
	G501.2P	Practical II
	<b>G501.2E</b>	<b>PHYSICS WORKSHOP SKILLS</b>
III	G501.3	Acoustics, Optics and Networks
	G501.3P	Practical III
	<b>G501.3E</b>	<b>BASIC INSTRUMENTATION SKILLS</b>
IV	G501.4	Electromagnetism, Electricity II and Electronics I
	G501.4P	Practical IV
	<b>G501.4E</b>	<b>RENEWABLE ENERGY AND ENERGY HARVESTING</b>
V	G501.5a	Atomic Physics
	G501.5b	Solid State Physics
	G501.5P	Practical V
VI	G501.6a	Nuclear Physics and Analog Electronics
	G501.6b	Communication and Digital Electronics, Special properties of materials
	G501.6P	Practical VI

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No: SAC 40/Syllabus 2019-20

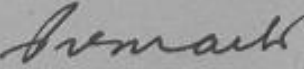
Date: 18-07-2019

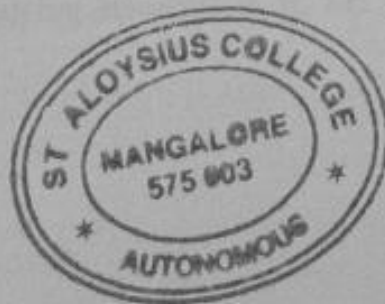
### NOTIFICATION

Sub: Syllabus of **B.Sc. Mathematics** under Choice Based Credit System.

- Ref: 1. Decision of the Academic Council meeting held on 02-05-2019 vide  
Agenda No: 21(2019-20)  
2. Office Notification dated 18-07-2019

Pursuant to the above, the Syllabus of **B.Sc. Mathematics** under Choice Based Credit System which was approved by the Academic Council at its meeting held on 02-05-2019 is hereby notified for implementation with effect from the academic year 2019-20.

  
PRINCIPAL



  
REGISTRAR



## SCOPE OF THE SYLLABUS

This syllabus is framed in such a way that the students learn Calculus and Differential Equations and their applications, which help them to learn allied subjects like Physics, Computer Science, in a better way. Also, the students learn Number Theory and Algebra which can motivate the students to go for higher studies in Mathematics. A variety of optional papers are given so that the students can learn the subjects of their interest.

Course Pattern and Scheme of Examinations

Group II: Optional III B.Sc. Mathematics

Semester	Paper	Hours per week	Duration of the Exam(hrs)	Semester Exams	Marks Internal Assessment*	Total
I	Paper1	6	3	100	50	150
II	Paper2	6	3	100	50	150
III	Paper3	6	3	100	50	150
IV	Paper4	6	3	100	50	150
V	Paper5(a)	5	3	100	50	150
	Paper5(b) Elective*	5	3	100	50	150
VI	Paper6(a)	5	3	100	50	150
	Paper6(b) Elective*	5	3	100	50	150
					Total	1200

\*For each paper Internal Assessment marks shall be awarded based on the marks scored in two tests and projects/assignment/Surprise tests.

\*During the V & VI semester, a student can opt for any one of the special papers offered in syllabus, except that a student studying statistics in B. Sc. cannot opt for the paper 'distribution theory'.

Semester	Paper	Paper Code	Title of the Paper
I	Paper 1	G 503.1	Calculus
		<b>G 503.1E</b>	<b>Functions and Applications</b>
II	Paper 2	G 503.2	Calculus, Number Theory And Differential Equations
		<b>G 503.2E</b>	<b>Vector Calculus</b>
III	Paper 3	G 503.3	Number Theory, Group Theory & Multivariate Calculus
		<b>G 503.3E</b>	<b>Applications of Basic Arithmetic</b>
IV	Paper 4	G 503.4	Functions Of A Complex Variable, Number Theory, Group Theory And Real Analysis
		<b>G 503.4E</b>	<b>Skill Development Techniques In Mathematics using Computer aided Tools</b>
V	Paper 5(a)	G 503.5(a)	Differential Equations, Laplace transform and Algebra
	Paper 5(b)	G 503.5(b)i	5(b)i Discrete Mathematics
	Special	G 503.5(b)ii	5(b)ii Numerical Methods
	Paper	G 503.5(b)iii	5(b)iii Graph Theory
		G 503.5(b)iv	5(b)iv Linear programming
		G 503.5(b)v	5(b)v Mathematical Modeling
		G 503.5(b)vi	5(b)vi Distribution Theory
VI	Paper 6(a)	G 503.6(a)	Partial Differential Equations, Fourier Series and linear algebra.
	Paper 6(b)	G 503.6(b)i	6(b)i Discrete Mathematics
	Special	G 503.6(b)ii	6(b)ii Numerical Methods
	Paper	G 503.6(b)iii	6(b)iii Graph Theory
		G 503.6(b)iv	6(b)iv Linear programming
		G 503.6(b)v	6(b)v Mathematical Modeling
		G 503.6(b)vi	6(b)vi Distribution Theory

A Student has to opt a special paper in paper 6(b) which is different from what was opted earlier in paper 5(b).

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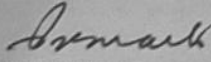
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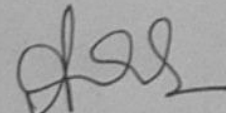
Sub: Syllabus of **B.Sc. Statistics** under Choice Based Credit System.

- Ref: 1. Decision of the Academic Council meeting held on 02-05-2019 vide  
Agenda No: 22(2019-20)  
2. Office Notification dated 18-07-2019

Pursuant to the above, the Syllabus of **B.Sc. Statistics** under Choice Based Credit System which was approved by the Academic Council at its meeting held on 02-05-2019 is hereby notified for implementation with effect from the academic year 2019-20.

  
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**Scheme of Instruction & Examination: B.Sc. Statistics-(Theory and Practical)**

Semester	Title of the Paper	Hrs. of instruction	Duration of Exam	Maximum Marks Theory + IA	No. of Credits
I	G 506.1: Descriptive Statistics & Probability Theory	04	03	70+30=100	2
	G 506.1a: Descriptive Statistics & Probability Theory Practical.	03	03	40+10=50	1
	<b>G 506.1E: Applied Statistics</b>	02	02	40+10=50	1
II	G506.2:Probability Distributions	04	03	70+30=100	2
	G506.2a: Probability Distributions Practical.	03	03	40+10=50	1
	<b>G 506.2E: Data Analysis using Ms Excel</b>	02	02	40+10=50	1
III	G506.3: Statistical Inference I	04	03	70+30=100	2
	G506.3a: Statistical Inference I Practical.	03	03	40+10=50	1
	<b>G 506.3E: Probability Distributions</b>	02	02	40+10=50	1
IV	G506.4: Statistical Inference II	04	03	70+30=100	2
	G506.4a: Statistical Inference II Practical.	03	03	40+10=50	1
	<b>G 506.4E: Statistical Data Analysis using SPSS</b>	02	02	40+10=50	1
V	G506.5a.: Designs of Experiments	03	03	70+30=100	2
	G506.5 b: Elective (1) – <b>Total Quality Management</b>	03	03	70+30=100	2
	<b>OR</b> Elective (2) – Regression Analysis G506.5a: Practical based on G506.5 and G506.5a	04	04	80+20=100	2
VI	G506.6a: Sampling Theory	03	03	70+30=100	2
	G506.6: Elective (1) – <b>Operation Research</b>	03	03	70+30=100	2
	<b>OR</b> Elective (2) - Simulation G506.6a.: Practical based on G506.6 and G506.6a	04	04	80+20=100	2