



SRI MANAKULA VINAYAGAR ENGINEERING COLLEGE

(An Autonomous Institution)

(Approved by AICTE, New Delhi & Affiliated to Pondicherry University)
(Accredited by NBA-AICTE, New Delhi, Accredited by NAAC with "A" Grade)
Madagadipet, Puducherry - 605 107



SCHOOL OF ARTS AND SCIENCE

DEPARTMENT OF MATHEMATICS

MINUTES OF BOARD OF STUDIES 5th MEETING

Venue

Department of Mathematics

School of Arts and Science (Block)

Sri Manakula Vinayagar Engineering College

Date & Time

22.02.2023 & 10.00 am to 12.30 pm

B.Sc. Mathematics

BoS 5th Meeting (22.02.2023)



DEPARTMENT OF MATHEMATICS

Minutes of Board of Studies 5th Meeting

The Board of Studies 5th meeting was held on 22.02.2023 (Wednesday) at 10.00 A.M in the Department of Mathematics, Sri Manakula Vinayagar Engineering College, with Head of the Department in the Chair.

The following members were present for the BoS meeting

Sl.No	Name of the Member with Designation and official Address	Members as per UGC norms
1	Dr. T. Gayathri M.Sc., M.Phil., Ph.D. Professor and Head Department of Mathematics Sri Manakula Vinayagar Engineering College Puducherry- 605107 gayathrithiyagu@smvec.ac.in / 9486580058	Chairman
2	Dr. S. Tamilselvan M.Sc., M.Phil., Ph.D. Professor & Head Department of Mathematics Annamalai University, Chidambaram- 608 002 stamilselvan@hotmail.com /9443073937	Subject Expert (University Nominee)
3	Dr. P. Balaji M.Sc., M.Phil., Ph.D. Assistant Professor (Stage II) Department of Mathematics SCSVMV university, Kanchipuram-631561 pbr1002017@gmail.com /9486082115	Subject Expert (Academic Council Nominee)
4	Dr. S. Srinivasan M.Sc., M.Phil., Ph.D. Assistant Professor Department of Mathematics Periyar Government Arts and Science College, Cuddalore -607003 smrail@gmail.com /7010939424	Subject Expert (Academic Council Nominee)
5	Mr. G. Indragoby Associate Director Sensipe Software Solutions(p)Ltd Chennai indragoby@gmail.com /98432223234	Member (Representative from Industry)
6	Mr.P.Krishnamoorthy M.Sc., M.Phil. Assistant Professor Department of Mathematics Sri Manakula Vinayagar Engineering College Puducherry- 605107 krishnamoorthymaths@smvec.ac.in /9750028056	Internal Member
7	Dr.B.Kanimozhi M.Sc., M.Phil.,Ph.D. Professor Department of Mathematics Sri Manakula Vinayagar Engineering College	Internal Member

	Puducherry– 605107 kanimozhimaths@smvec.ac.in /7708824215	
8	Mr. R. Sivakumar M.Sc., M.Phil. Assistant Professor Department of Mathematics Sri ManakulaVinayagar Engineering College Puducherry– 605107 sivakumarmaths.sas@smvec.ac.in /8667646837	Internal Member
9	Mr. D. Gnanavel M.Sc., M.Phil. Assistant Professor Department of Mathematics Sri ManakulaVinayagar Engineering College Puducherry– 605107 gnanavel.sas@smvec.ac.in /9629123962	Internal Member
10	Mrs.S.P.Lavanya M.Sc., M.Phil. Assistant Professor Department of Mathematics Sri ManakulaVinayagar Engineering College Puducherry– 605107 lavanya@smvec.ac.in /9655887720	Internal Member
11	Mrs. S Geetha M.Sc., M.Phil. Assistant Professor Department of Physics Sri ManakulaVinayagar Engineering College Puducherry– 605107 geethaphysics@smvec.ac.in /9942355656	Internal Member
12	Dr. K. Karthikeyan M.Sc., M.Phil., Ph.D. Associate Professor Department of Chemistry Sri ManakulaVinayagar Engineering College Puducherry– 605107 karthikeyank2005@gmail.com /9344707262	Internal Member
13	Mr.M.ElamaranM.A., M.Phil. Assistant Professor Department of English Sri ManakulaVinayagar Engineering College Puducherry - 605107 elamaraneng@smvec.ac.in / 9500712597	Internal Member




AGENDA OF THE MEETING

Item No.: BoS/ UG / B.Sc. Mathematics 5.1

- Welcome Address, Introduction about the Institution and Department, Introduction of BoS Members.
- To Confirm the minutes of Board of Studies 4th meeting.

Item No.: BoS/ UG / B.Sc. Mathematics 5.2

To discuss and approve the Regulations 2023 for B.Sc. Mathematics programme.

Item No.: BoS/ UG / B.Sc. Mathematics 5.3

To discuss and approve the Curriculum Framework (1 to 6 Semesters) and Syllabi of 1st Semester for the Programme B.Sc. Mathematics under Regulations 2023.

Item No.: BoS/ UG / B.Sc. Mathematics 5.4

To discuss the following under the Regulations 2023 of School of Arts and Science, Sri Manakula Vinayagar Engineering College.

- To discuss about the necessary action to be taken for the admission for the B.Sc., Mathematics Programme
- Admission Eligibility Criteria.
- Conduct of Internal Assessment Test, Award of Continuous Assessment Marks / Re Earn / Improvement / Evaluation Procedures.
- To discuss about NPTEL / Online Course list and Evaluation Procedure.
- To discuss Value added Courses
- To discuss about Academic calendar

Item No.: BoS/ UG / B.Sc. Mathematics 5.5

Any other item with the permission of chair.



Minutes of Board of Studies 5th Meeting



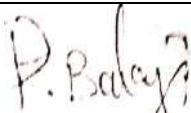
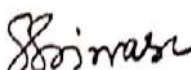


Item No : BoS/ UG / B.Sc Mathematics 5.1	Welcome Address, Introduction about the Institution and Department, Introduction of BoS Members.				
	<ul style="list-style-type: none"> • The Chairman of the meeting formally welcomed the hon'ble members of the Board and introduced them the credentials of the Institution and of the Department. • The attainments and awards of the Institution have been briefed for the benefit of the members of the Board. • The members have expressed their appreciations for the achievements of the Institution, the Departments and students who placed in the Campus. 				
	To Confirm the minutes of Board of Studies 4th meeting.				
	The following Suggestions were given by BoS members for the V and VI semesters' courses in the 4th BoS meeting.				
	SI.No	Regulation	Semester	Course Title/ Course Code	Unit
1	R20	V	Artificial intelligence/ A20MAE506	Unit-V	Suggested to Remove the following topics: Perception–Planning– Moving
2	R20	VI	Astronomy / A20MAE608	Unit-I	Suggested to Remove the following topics: Diurnal Motion - Rising and setting of a star - Sidereal time - Circumpolar Star - Morning and Evening starts - Twilight - Earth - Length of the day.
				Unit-V	Suggested to Remove the following topics: Stellar Universe - A brief history of Astronomy- Astronomical Instruments.
These suggestions were incorporated in the syllabi and approved by the expert members and Recommended to Academic Council. [Details are Attached in Annexure I]					
To discuss and approve the Regulations 2023 for B.Sc. Mathematics programme.					




<p>Item No. : BoS/ UG / B.Sc Mathematics 5.2</p>	<p>The Regulations 2023 presented before the BOS members.</p> <p>The board members approved the Regulation 2023 for B.Sc. Mathematics programme and forwarded to Academic council.</p>
<p>Item No. : BoS/ UG / B.Sc Mathematics 5.3</p>	<p>To discuss and approve the Curriculum Framework (1 to 6 Semesters) and Syllabi of 1st Semester for the Programme B.Sc. Mathematics under Regulations 2023.</p> <ul style="list-style-type: none"> • The Curriculum for the B.Sc., Mathematics (I to VI Semesters) under Autonomous Regulations R-2023 were discussed and it was given in Annexure II. • The board members approved the Curriculum under Regulation 2023 for B.Sc. Mathematics programme and forwarded to Academic council.
<p>Item No : BoS/ UG / B.Sc Mathematics 5.4</p>	<ul style="list-style-type: none"> • To discuss about the necessary action to be taken for the admission for the B.Sc., Mathematics Programme. <p>The BOS members suggested to start the program even though the number of admission is minimum, in future we can gradually increase the admissions.</p> • Admission Eligibility Criteria. <p>A Pass in +2/HSC (or equivalent) with “Mathematics” as one of the subjects</p> • Conduct of Internal Assessment Test, Award of Continuous Assessment Marks / Re Earn / Improvement / Evaluation Procedures. <ul style="list-style-type: none"> ✓ The internal mark will be provided fully based on continuous assessment test , model Exam, Student Attendance and Assignment. ✓ Students with lower internal marks can increase their internal marks by writing the ✓ Re Earn exam. ✓ Improvement exam will be given to the students who fail in CAT I, CAT II and Model exam • To discuss about NPTEL / Online Course list and Evaluation Procedure. <p>We discussed the online courses available related to Mathematics</p> • To discuss Value added Courses. <p>We discussed to add the value-added course and its importance.</p> • To discuss about Academic calendar. <p>We discussed dates of internal Exams, events to be conducted for the Semester I of 2023 – 2026 Batch students.</p>
<p>Item No : BoS/ UG / B.Sc Mathematics 5.5</p>	<p>Any other agenda – Nil</p>

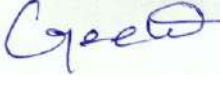
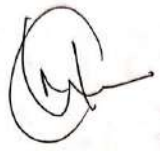



The meeting was concluded at 12:00 PM with vote of thanks by **Dr. T. Gayathri**, Chairman, Board of Studies, Department of Mathematics, Sri Manakula Vinayagar Engineering College.

Sl.No	Name of the Member with Designation and official Address	Members as per UGC norms	Signature
1	Dr. T. Gayathri M.Sc., M.Phil., Ph.D. Professor and Head Department of Mathematics Sri Manakula Vinayagar Engineering College Puducherry- 605107 gayathrithiyagu@smvec.ac.in / 9486580058	Chairman	
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5	Mr. G. Indragoby Senior Technical Architect HCL Technologies, Chennai indragoby@gmail.com /98432223234	Member (Representative from Industry)	
6	Mr.P.Krishnamoorthy M.Sc., M.Phil. Assistant Professor Department of Mathematics Sri Manakula Vinayagar Engineering College Puducherry- 605107 krishnamoorthymaths@smvec.ac.in /9750028056	Internal Member	
7	Dr.B.Kanimozhi M.Sc., M.Phil.,Ph.D. Professor Department of Mathematics Sri Manakula Vinayagar Engineering College Puducherry- 605107 kanimozhimaths@smvec.ac.in /7708824215	Internal Member	
8	Mr. R. Sivakumar M.Sc., M.Phil. Assistant Professor	Internal Member	





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13	Mr.M.ElamaranM.A., M.Phil. Assistant Professor Department of English Sri Manakula Vinayagar Engineering College Puducherry - 605107 elamaraneng@smvec.ac.in / 9500712597	Internal Member	

Chairman/BOS
(Dr. T. Gayathri)

Dean SAS
(Dr. S. Muthulakshmi)

Dean Academics
(Dr. S. Anbumalar)

Director cum Principal
(Dr. V. S. K. Venkatachalapathy)




ANNEXURE I

A20MAE506	REVISED	L	T	P	C	Hrs
	ARTIFICIAL INTELLIGENCE	3	1	0	4	60

Course Objectives

- To understand the various characteristics of Intelligent agents
- To learn the different search strategies in AI
- To gain knowledge in solving AI problems
- To understand the different ways of designing software agents
- To know about the various applications of AI.

Course Outcomes

- After completion of the course, the students will be able to
- CO1 – Use appropriate search algorithms for any AI problem.
 - CO2 – Represent a problem using first order and predicate logic
 - CO3 – Provide the apt agent strategy to solve a given problem
 - CO4 – Design software agents to solve a problem.
 - CO5 – Design applications for NLP.

UNIT I INTRODUCTION

(12 Hrs)

Introduction – Definition – Future of Artificial Intelligence – Characteristics of Intelligent Agents– Typical Intelligent Agents – Problem Solving Approach to Typical AI problems.

UNIT II PROBLEM SOLVING METHODS

(12 Hrs)

Problem solving Methods – Search Strategies– Uninformed – Informed –Heuristics –Local Search Algorithms and Optimization Problems – Searching with Partial Observations – Constraint Satisfaction Problems – Constraint Propagation – Backtracking .

UNIT III KNOWLEDGE REPRESENTATION

(12 Hrs)

First Order Predicate Logic – Prolog Programming – Unification – Forward Chaining–Backward Chaining – Resolution – Knowledge Representation – Ontological Engineering-Categories and Objects .

UNIT IV SOFTWARE AGENTS

(12 Hrs)

Architecture for Intelligent Agents – Agent communication – Negotiation and Bargaining – Argumentation among Agents – Trust and Reputation in Multi-agent systems.

UNIT V APPLICATIONS

(12 Hrs)

AI applications – Language Models – Information Retrieval– Information Extraction – Natural Language Processing – Machine Translation – Speech Recognition – Robot – Hardware.

Text Books

1. S. Russell and P. Norvig, "Artificial Intelligence: A Modern Approach, Prentice Hall, Third Edition, 2009.
2. I.Bratko, —Prolog: Programming for Artificial Intelligence, Fourth edition, Addison-Wesley Educational Publishers Inc., 2011.
3. David L. Poole and Alan K. Mackworth, —Artificial Intelligence: Foundations of Computational Agents, Cambridge University Press, 2010.

Reference Books

1. M. Tim Jones, Artificial Intelligence: A Systems Approach (Computer Science) II, Jones and Bartlett Publishers, Inc.; First Edition, 2008
2. Nils J. Nilsson, The Quest for Artificial Intelligence, Cambridge University Press, 2009.

- William F. Clocksin and Christopher S. Mellish, *Programming in Prolog: Using the ISO Standard*, Fifth Edition, Springer, 2003

Web References

- <https://pdf.co/blog/problem-solving-techniques-in-artificial-intelligence-ai>
- <https://nptel.ac.in/courses/106/102/106102220/>
- <https://www.cpp.edu/~ftang/courses/CS420/notes/logical%20agent.pdf>

	REVISED	L	T	P	C	Hrs
A20MAE608	ASTRONOMY	3	1	0	4	60

Course Objectives

- To introduce the concept Spherical Trigonometry
- To learn about Effects of Parallax
- To Acquire the knowledge about the celestial sphere, solar system and stellar universe.
- To Know about lunar eclipse and solar eclipse.
- Know about the positions of the stars

Course Outcomes

After completion of the course, the students will be able to

- CO1** – Understand the concept of Spherical Trigonometry
CO2 – Analyze and apply the knowledge about Effects of Parallax
CO3 – Able to understand solar system and stellar universe.
CO4 – Understand the concept of eclipse and solar eclipse.
CO5 – To learn of the stars and the constellations as seen from a given place

UNIT I

(12 Hrs)

Spherical Trigonometry - Spherical Triangle - The fundamental formulae of Spherical Trigonometry, the sine, cosine, four parts and Napier formulae (without proof). The Celestial Sphere : Celestial coordinator.

UNIT II

(12 Hrs)

Refraction - Tangent Formula Cassini's formula - Effects of Refraction - Geocentric Parallax - Effects of Geocentric Parallax - Heliocentric Parallax - Effects of Heliocentric Parallax - Aberration - Its Effects.

UNIT III

(12 Hrs)

Kepler's Laws - Verification of Kepler's Laws - True anomaly, Mean Anomaly- Eccentric Anomaly, Relation between them - Time - Equation of Time - Seasons - Conversion of Time.

UNIT IV

(12 Hrs)

Moon - Sidereal Month, Lunation and Relation between them - Phases of the Moon - Lunar Libration - Surface of the Moon - Metonic Cycle – Tides.

UNIT V

(12 Hrs)

Planetary Phenomena - Bodes law - Elongation - Sidereal Period, Synodic period and the relation between them - Phase - Stationary Points - Solar System.

Text Books

- Andrew Franknoi, David Morrison and Sidney C. Wolff "Astronomy" pressbooks on August 7, 2019.
- Eric Chaisson and Steve McMillan "Astronomy: A Beginner's Guide", Pearson's, Publication, 7th Edition, 2017.
- Karttunen, H., Kröger, P., Oja, H., Poutanen, M., Donner, K.J. (Eds.) "Fundamental Astronomy" Springer Verlag Berlin 2017

Reference Books

- Jacqueline Mitton, David W. Hughes, Robert Dinwiddie, Penny Johnson Tom Jackson, "The Astronomy Book: Big Ideas Simply Explained", September 5th 2017 by DK Publishing (Dorling Kindersley)
- Astronomy for degree classes, Prof. S. Kumaravelu and Prof. Susheela Kumaravelu, Rainbow printers, Nagercoil (2005).
- Karttunen, H., Kroger, P., Oja, H., Poutanen M and Donner, K.J. "Fundamental Astronomy" Springer, 6th edition 2017

Web Resources

1. <https://www.lonestar.edu/astronomy-web.htm>
2. www.astronomynow.com
3. <https://www.istl.org/02-spring/internet2.html>

ANNEXURE II CURRICULUM

SEMESTER – I										
Sl. No.	Course Code	Course Title	Category	Periods			Credits	Max. Marks		
				L	T	P		CAM	ESM	Total
Theory										
1	A23TAT101C / A23FRT101C	Tamil-I / French - I	MIL	3	0	0	3	25	75	100
2	A23GET101C	General English I	ENG	3	0	0	3	25	75	100
3	A23MAT101D	Calculus	DSC	3	1	0	4	25	75	100
4	A23MAT102D	Trigonometry	DSC	3	1	0	4	25	75	100
5	A23PHD101D	Allied physics	IDC	3	1	0	4	25	75	100
Practical										
6	A23PHL109D	Allied Physics practical	IDC	0	0	4	2	50	50	100
Skill Enhancement Courses										
7	A23ENSA02C	Soft Skill	SEC	3	0	0	2	100	0	100
Ability Enhancement Compulsory Course										
8	A23AETA01C	Public Administration	AECC	2	0	0	1	100	0	100
Employability Enhancement Course										
9	A23MAC101D	Certificate Course-I	EEC	0	0	4	-	100	0	100
							23	475	425	900

SEMESTER – II										
Sl. No.	Course Code	Course Title	Category	Periods			Credits	Max. Marks		
				L	T	P		CAM	ESM	Total
Theory										
1	A23TAT202C / A23FRT202C	Tamil-II / French - II	MIL	3	0	0	3	25	75	100
2	A23GET202C	General English II	ENG	3	0	0	3	25	75	100
3	A23MAT203D	Vector Calculus	DSC	3	1	0	4	25	75	100
4	A23MAT204D	Ordinary Differential Equations	DSC	3	1	0	4	25	75	100
5	A23CMD201D	Fundamentals of Financial Accounting	IDC	3	1	0	4	25	75	100
Practical										
6	A23CML202D	Accounting Software Lab	IDC	0	0	2	2	50	50	100
Skill Enhancement Courses										

6	A23ENSA01C	Communication Skill Lab	SEC	3	0	0	2	100	0	100
Ability Enhancement Compulsory Course										
8	A23AETA02C	Environmental Studies	AECC	2	0	0	1	100	0	100
Extension Activity										
8	A23EAS201C	National service scheme [NSS]	EA	0	0	2	-	100	0	100
Employability Enhancement Course										
9	A23MAC202D	Certificate Course-II	EEC	0	0	2	-	100	0	100
							23	575	425	1000

SEMESTER – III										
Sl. No.	Course Code	Course Title	Category	Periods			Credits	Max. Marks		
				L	T	P		CAM	ESM	Total
Theory										
1	A23MAT305D	Partial Differential Equation	DSC	3	1	0	4	25	75	100
2	A23MAT306D	Fourier Series & Fourier Transforms	DSC	3	1	0	4	25	75	100
3	A23MAT307D	Mechanics I (statics)	DSC	3	1	0	4	25	75	100
4	A23MAD101D	Statistics - I	IDC	3	1	0	4	25	75	100
5	A23XXE3XXX	DSE I*	DSE	3	1	0	4	25	75	100
6	A23XXO30XC	Open Elective-I**	OE	2	0	0	2	25	75	100
Practical										
7	A23MAL301D	Statistics – I Lab [Using MATLAB]	IDC	0	0	4	2	50	50	100
Skill Enhancement Courses										
8	A23MASA01C	Quantitative Aptitude and Logical Reasoning	SEC	3	0	0	2	100	0	100
Ability Enhancement Compulsory Course										
9	A23AETA03C	Indian Constitution	AECC	2	0	0	1	100	0	100
Employability Enhancement Course										
10	A23MAC303D	Certificate Course-III	EEC	0	0	2	-	100	0	100
							27	500	500	1000

SEMESTER – IV										
Sl. No.	Course Code	Course Title	Category	Periods			Credits	Max. Marks		
				L	T	P		CAM	ESM	Total
Theory										
1	A23MAT408D	Discrete Mathematics and Graph Theory	DSC	3	1	0	4	25	75	100
2	A23MAT409D	Operations Research	DSC	3	1	0	4	25	75	100

3	A23MAT410D	Mechanics II (Dynamics)	DSC	3	1	0	4	25	75	100
4	A23MAD402D	Statistics – II	IDC	3	1	0	4	25	75	100
5	A23XXE4XXX	DSE II*	DSE	3	1	0	4	25	75	100
6	A23XXO40XC	Open Elective-II**	OE	2	0	0	2	25	75	100
Practical										
7	A23MAL402D	Statistics – II Lab [Using R]	IDC	0	0	4	2	50	50	100
Skill Enhancement Courses										
8	A23MAS401D	Sequence and Series	SEC	3	0	0	2	100	0	100
Ability Enhancement Compulsory Course										
9	A23AETA04C	Value Education	AECC	2	0	0	1	100	0	100
Internship										
10	A23MAN401D	Internship	DSC	0	0	6	3	40	60	100
Employability Enhancement Course										
11	A23MAC404D	Certificate Course-IV	EEC	0	0	2	-	100	0	100
							30	500	500	1000

SEMESTER – V										
Sl. No.	Course Code	Course Title	Category	Periods			Credits	Max. Marks		
				L	T	P		CAM	ESM	Total
Theory										
1	A23MAT511D	Abstract Algebra	DSC	3	1	0	4	25	75	100
2	A23MAT512D	Real Analysis-I	DSC	3	1	0	4	25	75	100
3	A23MAT513D	Complex Analysis	DSC	3	1	0	4	25	75	100
4	A23XXE5XXX	DSE III*	DSE	3	1	0	4	25	75	100
Skill Enhancement Courses										
5	A23MAS502D	Research Methodology	SEC	3	0	0	2	100	0	100
							18	200	300	500

SEMESTER – VI										
Sl. No.	Course Code	Course Title	Category	Periods			Credits	Max. Marks		
				L	T	P		CAM	ESM	Total
Theory										
1	A23MAT614D	Linear Algebra	DSC	3	1	0	4	25	75	100
2	A23MAT615D	Real Analysis-II	DSC	3	1	0	4	25	75	100
3	A23XXE6XXX	DSE IV*	DSE	3	1	0	4	25	75	100
Practical										
4	A23MAP601D	Project work	DSC	0	0	10	5	40	60	100

Skill Enhancement Courses										
5	A23MAS603D	Mathematical Modelling	SEC	3	0	0	2	100	0	100
							19	175	225	400