

# VISVESVARAYA TECHNOLOGICAL UNIVERSITY

Jnana Sangam, Machhe, Belagavi-590018



## Scheme of Teaching and Examinations 2026

Outcome-Based Education (OBE) and Choice-Based Credit System (CBCS)  
(Effective from the academic year 2026-27)

**B.Sc.(Hon). Program**  
**Scheme of Teaching and Examinations 2026**

Outcome-Based Education (OBE) and Choice-Based Credit System (CBCS) (Effective from the academic year 2026-27)

IV SEMESTER (Major- MATHEMATICS)														
Sl. No	Course and Course Code		Course Title	Teaching Department (TD) and Question Paper Setting Board (PSB)	Teaching & Learning Scheme					Examination				Credits
					CI		LI	# TW & SL	TH/S	Duration in	CIE Marks	SEE Marks	Total Marks	
					L	T	P							
1	DC	4BSM41	Numerical Analysis-I	Mathematics	42	28	0	20	90	3	50	50	100	3
2	DC	4BSM42	Real Analysis-I and Complex Analysis-I	Mathematics	42	28	0	20	90	3	50	50	100	3
3	SSE	4BSS43X	Stream Specific Elective	Physics/ Chemistry	42	28	0	20	90	3	50	50	100	3
4	DC	4BSML44	Practical on Numerical Analysis	Mathematics	0	0	42	18	60	3	50	50	100	2
5	OEC	4BSO45X	Open elective course	Maths / IT Department	28	14	0	18	60	2	50	50	100	2
6	SEC	4BSM46	Statistics - I	Mathematics	28	14	0	18	60	2	50	50	100	2
7	AEC	4BSC47	Constitution of India and Political Science	HSMC	28	14	0	18	60	2	50	50	100	2
8	SEC	4BSC48X	Online course (Mathematics Related)	MOOCS/ VTU/NPTEL/COURSERA	0	0	0	60	60	0	50	50	100	2
9	AEC	4BSC49	Indian Knowledge System	Any Department	14	0	0	16	30	1	50	50	100	1
<b>Total</b>									<b>600</b>		<b>450</b>	<b>450</b>	<b>900</b>	<b>20</b>

**# TH/S- Total Hours per Semester, TW & SL- Term Work & Self Learning**

**Note:**

(i) **DC:** Discipline Course, **SEC:** Skill Enhancement Course, **AEC:** Ability Enhancement Course, **HSMC:** Humanity, Social Science and Management. **SSE:** Stream Specific Elective  
**OEC:** Open Elective Course

(ii) **Summer Internship – 1** All the students shall undergo a mandatory internship of 03 weeks during the intervening period of IV and V semesters. The Internship shall be slated for CIE only and will not have SEE. The grade earned through CIE shall be included in the V semester grade card. A Viva-voce, Report submission and Presentation shall be conducted during Vth semester and the prescribed credit shall be included in the Vth semester. The summer internship -1 shall be considered as a head of passing, vertical progression and for the award of the degree. Those who do not take up/complete the internship shall be declared fail and shall have complete Summer Internship-1 during the subsequent examination/s after satisfying the internship requirement.

(iii) **Open Electives in Engineering Stream (Any One):** (a) 4BSO451 - Mathematical Modelling (b) 4BSO452 –Introduction to C programming language

(iv) **Stream Specific Elective (Any One):** (a) 4BSS431 -Concepts of Condensed Matter Physics (b) 4BSS432 - Soil and water Chemistry

<b>B.Sc.(Hon). Program</b>														
<b>Scheme of Teaching and Examinations 2026</b>														
Outcome-Based Education (OBE) and Choice-Based Credit System (CBCS) (Effective from the academic year 2026-27)														
<b>V SEMESTER (Major- MATHEMATICS)</b>														
Sl. No	Course and Course Code		Course Title	Teaching Department (TD) and Question Paper Setting Board (PSB)	Teaching & Learning Scheme					Examination			Credits	
					CI		LI	# TW & SL	# TH/S	Duration in hours	CIE Marks	SEE Marks		Total Marks
					L	T	P							
1	DC	4BSM51	Real Analysis – II and Mechanics - I	Mathematics	42	28	0	20	90	3	50	50	100	3
2	DC	4BSM52	Fourier Analysis and Transforms	Mathematics	42	28	0	20	90	3	50	50	100	3
3	SSE	4BSS53X	Stream Specific Elective	Physics/ Chemistry	42	28	0	20	90	3	50	50	100	3
4	DC	4BSML54	Practical on Fourier Analysis and Transforms	Mathematics	0	0	42	18	60	3	50	50	100	2
5	OEC	4BSO55X	Open elective course	Maths/IT Department	28	14	0	18	60	3	50	50	100	2
6	OEC	4BSO561	Economics	HSMC	28	14	0	18	60	02	50	50	100	2
		4BSO562	Indian History											
7	SEC	4BSC57	<b>Summer internship -1 ( Inter / Intra)</b>	Mathematics					90	03	100		100	3
8	DC	4BSC58	<b>Research Project -1, Phase -1</b>	Multidisciplinary					60	02	50	--	50	2
<b>Total</b>									<b>600</b>		<b>450</b>	<b>300</b>	<b>750</b>	<b>20</b>

#### # TH/S- Total Hours per Semester, TW & SL- Term Work & Self Learning

##### Note:

(i) **DC**: Discipline Course, **SEC**: Skill Enhancement Course, **AEC**: Ability Enhancement Course, **HSMC**: Humanity, Social Science and Management. **SSE**: Stream Specific Elective

**OEC**: Open Elective Course \* Refers to contact hours between student and guide.

(ii) **Research Project 1, Phase – 1**: All the students admitted shall have to undergo a phase I of mandatory Research project 1 during the Vth Semester. In Phase-1 the students are required to submit the title, synopsis, Literature Survey and work plan. Based on the ability/abilities of student/students and the recommendations of the mentor, a single discipline or a multidisciplinary research project 1 can be assigned to an individual student or to a group having not more than 4 students. The project is a laboratory-oriented course that will provide a platform to students to enhance their practical knowledge and skills by the development of small systems/ applications.

(iii) **Open Electives in Engineering Stream (Any One)**: (a) 4BSO551 - Concepts of Cyber Security (b) 4BSO552 – Introduction to Python programming

(iv) **Stream Specific Elective (Any One)**: (a) 4BSS531 - Introduction to Quantum Computing (b) 4BSS532 - Geochemistry

B.Sc.(Hon). Program Scheme of Teaching and Examinations 2026 Outcome-Based Education (OBE) and Choice-Based Credit System (CBCS) (Effective from the academic year 2026-27)														
VI SEMESTER (Major- MATHEMATICS)														
Sl. No	Course and Course Code		Course Title	Teaching Department (TD) and Question Paper Setting Board (PSB)	Teaching & Learning Scheme					Examination			Credits	
					CI		LI	# TW & SL	# TH/S	Duration in hours	CIE Marks	SEE Marks		Total Marks
					L	T	P							
1	DC	4BSM61	Abstract Algebra	Mathematics	42	28	0	20	90	3	50	50	100	3
2	DC	4BSM62	Ordinary Differential Equations-II and Partial Differential Equations-II	Mathematics	42	28	0	20	90	3	50	50	100	3
3	DC	4BSML63	Practical on Ordinary Differential Equations-II and Partial Differential Equations-II	Mathematics	28	14	0	18	60	3	50	50	100	2
4	DSE	4BSM641	Analytical Geometry	Mathematics	28	14	0	18	60	3	50	50	100	2
		4BSM642	Discrete Mathematical Structures											
5	SSE	4BSS65X	Stream Specific Elective	Physics/ Chemistry	42	28	0	20	90	3	50	50	100	3
6	OEC	4BSO661	Sociology	HSMC	28	14	0	18	60	2	50	50	100	2
		4BSO662	Finance & Banking											
7	DC	4BSM67	<b>Research Project-1 Phase 2</b>	Mathematics/ Multidisciplinary		2*			90	3	50	50	100	5
<b>Total</b>									<b>540</b>		<b>350</b>	<b>350</b>	<b>700</b>	<b>20</b>

# TH/S- Total Hours per Semester, TW & SL- Term Work & Self Learning

**Note:** (i) DC: Discipline Course, SEC: Skill Enhancement Course, AEC: Ability Enhancement Course, HSMC: Humanity, Social Science and Management. SSE: Stream Specific Elective OEC: Open Elective Course DSE: Discipline Specific Elective \* Refers to contact hours between student and guide.

(ii) **Research Project 1, Phase -2:** Semester-end examination of research project 1 will have the submission of the project report and viva voce presentation. The research project shall be considered as the head of passing for the award of degree. Those who do not take up/complete the mini-project shall be declared fail and shall have to complete Research project 1 during the subsequent examination/s after satisfying the project requirement.

(iii) **Summer Internship – 2** Internship of 04 weeks during the intervening period of VI and VII semesters; 4BSC76 Innovation/ Entrepreneurship/ Societal based Internship. (1) All the students shall undergo a mandatory internship of 04 weeks during the intervening period of VI and VII semesters. The internship shall be slated for CIE only and will not have SEE. The grade earned through CIE shall be included in the VII semester grade card. The internship shall be considered as a head of passing, vertical progression and award of degree. Those, who do not take up / complete the internship shall be considered under F (fail) grade and shall have to complete during subsequently after satisfying the internship requirements. (2) Innovation/Entrepreneurship/Societal Internship shall be carried out at industry, State and Central Government /Non-government organizations (NGOs), micro, small and medium enterprises (MSME), Innovation centres or Incubation centres. Societal/Rural internship is a work-based activity in which students will have a chance to identify the problems facing by the rural community and solve/reduce the identified problems through innovative ideas/projects/mechanisms.

(iv) **Stream Specific Elective (Any One):** (a) 4BSS651 - Semiconductors & Electronics (b) 4BSS652: Industrial Chemistry

<b>B.Sc.(Hon). Program</b>														
<b>Scheme of Teaching and Examinations</b>														
<b>2026</b>														
Outcome-Based Education (OBE) and Choice-Based Credit System (CBCS) (Effective from the academic year 2026-27)														
<b>VII SEMESTER (Major- MATHEMATICS)</b>														
Sl. No	Course and Course Code		Course Title	Teaching Department (TD) and Question Paper Setting	Teaching Hours /Week				Examination				Credits	
					CI		LI	# TW & SL	# TH/S	Duration in hours	CIE Marks	SEE Marks		Total Marks
					L	T	P							
1	DC	4BSM71	Complex Analysis – I and Fuzzy Logic - I	Mathematics	42	28	0	20	90	3	50	50	100	3
2	DC	4BSM72	Probability Theory	Mathematics	42	28	0	20	90	3	50	50	100	3
3	DC	4BSML73	Practical on Complex Analysis and Probability theory	Mathematics	28	14	0	18	60	3	50	50	100	2
4	DSE	4BSM741	Topology	Mathematics	42	28	0	20	90	3	50	50	100	3
		4BSM742	Operational Research											
5	DSE	4BSM751	Graph Theory	Mathematics	48	28	0	20	90	3	50	50	100	3
		4BSM752	Differential Geometry											
6	SEC	4BSM76	<b>Summer Internship-2</b>	Mathematics					120	3	100	--	100	4
7	DC	4BSM77	<b>Research Project -2 Phase -1</b>	Mathematics / Multidisciplinary		2*			60	3	50	--	50	2
<b>Total</b>									<b>600</b>		<b>400</b>	<b>250</b>	<b>650</b>	<b>20</b>

# TH/S- Total Hours per Semester, TW & SL- Term Work & Self Learning

Note:

(i) DC: Discipline Course, SEC: Skill Enhancement Course, AEC: Ability Enhancement Course, HSMC: Humanity, Social Science and Management. SSE: Stream Specific Elective OEC: Open Elective Course DSE: Discipline Specific Elective PBL: Project Based Learning \* Refers to contact hours between student and guide.

(ii) **Research project 2, Phase-1:** All the students are required to submit the title, synopsis and work plan. The objective of the project work is – To encourage the independent learning and innovative attitude of the students. To develop interactive communication, organization time management and presentation skills. To inspire independent and team working. To train the students to present the topic of project work in a seminar without any fear, and face the audience confidently.

<b>B.Sc.(Hon). Program</b>														
<b>Scheme of Teaching and Examinations</b>														
<b>2026</b>														
Outcome-Based Education (OBE) and Choice-Based Credit System (CBCS) (Effective from the academic year 2026-27)														
<b>VIII SEMESTER (Major- MATHEMATICS)</b>														
Sl. No	Course and Course Code		Course Title	Teaching Department (TD) and Question Paper Setting Board (PSB)	Teaching Hours /Week					Examination				
					CI		LI	# TW & SL	# TH/S	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
					L	T	P							
1	DC	4BSM81	Advanced Linear Algebra	Mathematics	42	28	0	20	90	3	50	50	100	3
2	DC	4BSM82	Advanced Statistics	Mathematics	42	28	0	20	90	3	50	50	100	3
3	DC	4BSM83	Practical on Advanced Linear Algebra and Advanced Statistics	Mathematics	28	14	0	18	60	3	50	50	100	2
4	DSE	4BSM84	Number theory and Cryptography	Mathematics	42	28	0	20	90	3	50	50	100	3
5		4BSM85	Mechanics	Mathematics										
6	DC	4BSM86	<b>Research Project 2, Phase-2</b>	Mathematics		2*			240	3	50	50	100	8
7	AEC	4BSC87	NSS/ PE/ Yoga/ Fine arts	NSS/ PE	Completed during the Intervening period of IV to VIII Semester				30	--	50	50	100	1
<b>Total</b>									<b>600</b>		<b>300</b>	<b>300</b>	<b>600</b>	<b>20</b>

**# TH/S- Total Hours per Semester, TW & SL- Term Work & Self Learning**

**Note: (i) DC:** Discipline Course, **SEC:** Skill Enhancement Course, **AEC:** Ability Enhancement Course, **HSMC:** Humanity, Social Science and Management. **SSE:** Stream Specific Elective **OEC:** Open Elective Course **DSE:** Discipline Specific Elective **PBL:** Project Based Learning \* Refers to contact hours between student and guide.

**(ii) Project Based Learning (PBL):** (1) All the students shall undergo a mandatory PBL during the semester. The PBL shall be slated for CIE only and will not have SEE. A Viva-voce, Report submission and Presentation shall be conducted during the semester and prescribed credit shall be included. Those who do not take up/complete the PBL shall be declared fail and shall have to complete during the subsequent examination/s after satisfying the university requirement.

**(iii) Research Project 2, Phase 2** – The semester end examination of research project phase 2 will have the submission of research project report and viva voce presentation. The research project shall be considered as head of passing for the award of the degree. Those who do not take up/complete the research project shall be declared fail and shall have to complete the research project 2 during the subsequent examination/s after satisfying the project requirements.

**(iv) Non-credit mandatory courses (NMC):** National Service Scheme/Physical Education (Sport and Athletics)/ Yoga/Fine Arts: (1) Securing 40 % or more in CIE, 35 % or more marks in SEE, and 40 % or more in the sum total of CIE + SEE leads to successful completion of the registered course. (2) In case, students fail to secure 35 % marks in SEE, they have to appear for SEE during the subsequent examinations conducted by the University. (3) In case, any student fails to register for NSS, PE or Yoga/fails to secure the minimum 40 % of the prescribed CIE marks, he/she shall be deemed to have not completed the requirements of the course. In such a case, the student has to fulfill the course requirements during subsequently to earn the qualifying CIE marks subject to the maximum program period. (4) Successful completion of the course shall be indicated as satisfactory in the grade card. Non-completion of the course shall be indicated as Unsatisfactory. (5) These courses shall not be considered for vertical progression as well as for the calculation of SGPA and CGPA, but completion of the courses shall be mandatory for the award of a degree