VIGNAN'S
FOUNDATION FOR SCIENCE, TECHNOLOGY & RESEARCH

DEPARTMENT OF MATHEMATICS AND STATISTICS

Date: 27.12.2025

Minutes of Board of Studies Meeting

Department of Mathematics and Statistics has conducted the Board of Studies (BoS) meeting for the B.Tech, B.Sc. programs on 27.12.2025 at HoD Cabin, III floor, A Block in hybrid mode from 10.00 AM onwards, under the chairmanship of the Head of the Department of Mathematics and Statistics along with the committee and external members with external invitees through Microsoft Teams

(https://teams.microsoft.com/l/meetup-join/19%3ameeting_MmRjOGNhODEtM2Q0OC00MjQyLTg1MzgtNGRjODA5NTYyYjU2%40thread.v2/0?context=%7b%22Tid%22%3a%223b0993d8-31db-4db6-b617-64ac193c7ace%22%2c%22Oid%22%3a%226e433221-026e-4753-b9b3-11b08b74b76b%22%7d).

Agenda of the BoS Meeting:

1. To review the R25 regulations in line with NEP2020.
2. To review and suggest improvements in Pre-Semester courses offered for I B.Tech. students.
3. Review the Syllabus of Mathematics and Statistics courses of B. Tech. programs.
4. To discuss and finalize the course structure and detailed syllabus of courses to be offered for B.Sc. Honors (Actuarial Science) and for B.Sc. Honors (Statistics with Computer Science minor) programs.
5. To discuss and finalize the detailed syllabus of electives to be offered for B.Sc. Honors (Actuarial Science) and for B.Sc. Honors (Statistics with Computer Science minor).
6. To approve the syllabus of Mathematics, Statistics, Computer Science, Actuarial Science, Managerial, Humanities and elective courses of B.Sc. Honors (Actuarial Science) and for B.Sc. Honors (Statistics with Computer Science minor) and recommend to the Academic counsel.
7. Any other point with the permission of Chairperson.

The following internal members, external members, invitees were present physically/ participated through online

Sl. No	Name of the member	Designation and Address	Role	Signature
1	Prof. N. Seshagiri Rao	Professor and Head of the Department	Chair person	
2	Prof. P. Anantha Lakshmi Narayana	Professor of Mathematics IIT, Hyderabad Email: ananth@math iith.ac.in Mobile No: 9949287368	External member (Academia & Research)	
3	Dr. Gajula Srimannarayana,	Assistant Professor & Programme Coordinator, Department of Actuarial Science, Institute of Insurance and Risk Management (IIRM), Hyderabad, Telangana, India. Email: srimannarayana@theiirm.ac.in Contact: 9394317311	External member (Academia)	
4	Prof. P. Tirupathi Rao	Dean & Professor, Department of Statistics, Pandicherry Central University, Kalapet, Puducherry Email: drpadi@gmail.com Mobile No: 9629862241	External Invitee (Academia)	Attended Online
5	Mr. Sulthan Sherieff	Master of Science (M.Sc.) in Actuarial Science, Manager at BNP PARIBAS SECURITIES SERVICES Chennai, Tamil Nadu, India. Email: beckhamsherieff@gmail.com Contact: 9566398663	External Invitee (Industry)	Attended Online
6	Prof. P. L. N. Varma	Professor, Dept. of Math & Stat, VFSTR	Internal Member	
7	Prof. V. R. K. Murthy	Professor, Dept. of Math & Stat, VFSTR off campus, Hyderabad	Internal Member	Attended Online
8	Dr. P.Kalpana	Associate Professor, Dept. of Math & Stat, VFSTR	Internal Member	
9	Dr. P. Sadam Shekhar	Associate Professor, Dept. of Math & Stat, VFSTR	Internal Member	
10	Dr. U.V. Manoj Kumar	Assistant Professor, Dept. of Math & Stat, VFSTR	Internal Member	

11	Dr. K. Kalyani	Assistant Professor, Dept. of Math & Stat, VFSTR	Internal Member (Dean, R&D Nominee)	K Kalya
12	Dr. P. Radha Krishna Kishore	Assistant Professor, Dept. of Math & Stat, VFSTR	Internal Member (School Dean Nominee)	
13	Dr. U. Sri Ranganath	Assistant Professor, Dept. of English and FL, VFSTR	Invitee member	
14	Mr. N. Brahma Naidu	Assistant Professor, Department of CSE, VFSTR	Internal Invitee member	
15	Mr. I. Ganesh	Assistant Professor, Department of Management	Invitee member	
16	Dr. D. Ravi Kiran	Assistant Professor, Dept. of Math & Stat, VFSTR	Member Secretary (BoA)	

The following members have taken leave of absence:

Sl. No	Name of the member	Designation and Address	Role
1	Dr. Achintya Roy	Assistant Professor, Department of Mathematics, NIT Warangal Mobile No: 8001531814 Email : achintyaroy@nitw.ac.in	External member (Academia)

Chairperson **Dr. N. Seshagiri Rao**, Professor and Head, Department of Mathematics and Statistics, VFSTR opened the meeting by welcoming and introducing the external members, invitees to the internal members. Chairperson presented about the regulation R25-C25 which if refinement of R22. A brief review of Pre-semester planned and conducted for 1 B.Tech students is presented by the chair before the members for their comments and suggestions for improvement. The need of B.Sc. Honors (Actuarial Science) and B.Sc. Honors (Statistics with Computer Science minor) programs, possible specializations were discussed. He also highlighted the integration of industry expertise, the Indian Knowledge System (IKS), and Sustainable Development Goals (SDGs) into the curriculum to enhance the relevance, depth, and global impact of the academic programs.

Chairperson presented the proposal of offering, 4 years B.Sc. Honors program with Statistics Major and Computer Science minor, in place of existing 3 year B.Sc. with triple major Mathematics, Statistics and Computer Science and to extend the existing three year B.Sc. Actuarial Science to 4 years B.Sc. Honors in Actuarial Science, in line with NEP2020, from the academic year 2026-27.

The following points were discussed in the BoS meeting:

1. Pre-Semester courses offered for I B. Tech. students, its impact on students learning, possible improvements.
2. Syllabus of Statistics courses offered to B. Tech. and other programs of R25.
3. Course structure and detailed syllabus of courses to be offered for B.Sc. Honors (Actuarial Science) and for B.Sc. Honors (Statistics with Computer Science minor) programs.
4. Detailed syllabus of electives to be offered for B.Sc. Honors (Actuarial Science) and for B.Sc. Honors (Statistics with Computer Science minor).
5. SDG Mapping and incorporation of IKS components.
6. Recommendations from the DAAC November 2025 meeting were noted for curriculum enhancement and forwarded for BoS consideration.
7. Recommending the course structure and syllabi of Mathematics, Statistics, Actuarial Science, Computer Science, Managerial, Humanities and elective courses of B.Sc. Honors (Actuarial Science) and for B.Sc. Honors (Statistics with Computer Science minor) to the Academic council for approval.

The following are the observations:

1. BoS members appreciated the implementation of Pre Semester at different cognition levels to I B. Tech. students at different learning levels.
2. Modifications suggested by BoS Members were incorporated into course structure and approved Course structure of B.Sc. Honors with Statistics Major and Computer Science minor and B.Sc. Honors in Actuarial Science is provided in Appendix-I.
3. Elective courses, along with NPTEL alternatives for B.Sc. Honors with Statistics Major and Computer Science minor and B.Sc. Honors in Actuarial Science were discussed and approved list is provided in Appendix-I(A) and Appendix-I(B) respectively.

4. The curriculum of B.Sc. Honors with Statistics Major and Computer Science minor and B.Sc. Honors in Actuarial Science is encompassing the courses that enable employability or entrepreneurship or skill development, are listed in Appendix- II(A) and Appendix-II(B) respectively.
5. Total average percentage of syllabus revised for B.Sc. Honors with Statistics Major and Computer Science minor and B.Sc. Honors in Actuarial Science compared to previous curriculum is presented in Appendix-III(A) and Appendix-III(B) respectively.
6. The significant changes are made in the content of all courses of B.Sc. Honors with Statistics Major and Computer Science minor and B.Sc. Honors in Actuarial Science and hence these courses are considered as new courses listed in Appendix- IV(A) and Appendix-IV(B) respectively.
7. Indian Knowledge System (IKS) components are incorporated in the relevant courses and the details are mentioned in Appendix –V(A) and Appendix-V(B).
8. The courses in the curricula are mapped with the Sustainable Development Goals (SDG) and the mapping details are provided in Appendix – VI(A) & Appendix-VI(B).
9. The Board of Studies noted the detailed and structured Action Taken Report submitted by the DAAC. The report highlighted clear follow-up actions on stakeholder feedback, curriculum enhancement, and robust implementation of formative assessment reforms and CO-PO attainment tracking, as outlined in Appendix – VII.
10. The teaching-learning process now integrates AI-assisted personalized learning pathways for foundational subjects.
11. The curriculum encourages interdisciplinary learning and innovation by integrating Self-Learning (SL) components and offering flexible learning paths.
12. Feedback from various stakeholders is incorporated appropriately in the R25-C25 curriculum.
13. No modifications are suggested in the syllabi of Mathematics and Statistics courses of B. Tech. programs.

The following recommendations and approvals are made after the discussion:

1. BoS Members approved the proposed curriculum structure, syllabus of various courses of B.Sc. Honors programs (Statistics with Computer Science minor and Actuarial Science) in line with NEP 2020.

2. Department elective courses of B.Sc. Honors programs (Statistics with Computer Science minor and Actuarial Science) are approved.
3. SDG mapping and incorporation of the IKS components in the syllabus is approved.
4. The introduction of Self-Learning (SL) components with appropriate credit allocation and evaluation methods is approved.
5. It was recommended to institutionalize regular reviews and stakeholder feedback mechanisms to ensure continuous curriculum enhancement and relevance.

There being no further points for discussion, the Chairperson thanked all the external, internal, invited members and announced that the meeting was concluded.

Member Secretary

Chairperson

HEAD
Department of Mathematics and Statistics
School of Applied Sciences and Humanities

VIGNAN'S

DEPARTMENT OF MATHEMATICS AND STATISTICS

APPENDIX I(A)

COURSE STRUCTURE

B. Sc. Honors (Statistics with Computer Science minor)

Sl. No.	Course Title	L	T	P	SL	C	Course Category	Course Offered by
1.	Orientation Program	0	4	0	0	2	VAC	SA

I year I Semester (Semester 1)

Sl. No.	Course Title	L	T	P	SL	C	Course Category	Course Offered by
1.	Technical English Communication	2	0	2	2	3	AEC	EOFL
2.	Descriptive Statistics-I	3	0	2	3	4	Major-1	Statistics
3.	Calculus	3	2	0	3	4	Major-2	Mathematics
4.	Linear Algebra	3	2	0	3	4	Major-3	Mathematics
5.	Statistical computing with MS-Excel	0	0	2	0	1	Major	Statistics
6.	Agentic Tools	0	2	2	0	2	SEC	ACSE
7.	IT Tools & Cyber Security	0	2	2	0	2	VAC	ACSE
8.	Self-Understanding and Gender Sensitization	0	0	2	0	1	VAC	SA
	Total	**11**	**08**	**12**	**11**	**21**		
		31						

I year II Semester (Semester 2)

Sl. No	Course Title	L	T	P	SL	C	Course Category	Course Offered by
1.	English Proficiency and Communication skills	0	2	2	0	2	AEC	EOFL
2.	Descriptive Statistics-II	3	0	2	3	4	Major-4	Statistics
3.	Elementary Probability Theory	3	0	2	3	4	Major-5	Statistics
4.	Real Analysis	3	2	0	3	4	Major-6	Mathematics
5.	Python Programming	2	0	4	2	4	Minor-1	ACSE
6.	Statistical Data Analysis using Jamovi / SPSS	0	0	2	0	1	SEC	Statistics
7.	Universal Human Values	0	2	0	0	1	VAC	SA
8.	Sports, Physical fitness, Games	0	0	2	0	1	VAC	P.Ed.
	Total	**11**	**06**	**14**	**11**	**21**		
		31						

L=Lecture; T= Tutorial; P= Practical; SL=Self Learning; C=Credits

II year I Semester (Semester 3)

Sl. No.	Course Title	L	T	P	SL	C	Course Category	Course Offered by
1.	Business English Communication / Language-2	0	2	2	0	2	AEC	EOFL
2.	Distribution Theory	3	0	2	3	4	Major-7	Statistics
3.	Sampling Theory	3	0	2	3	4	Major-8	Statistics
4.	Data Structures	3	0	2	3	4	Minor-2	ACSE/CSE
5.	Database Management Systems	3	0	2	3	4	Minor-3	ACSE/CSE
6.	Data Analytics using R Programming	0	0	2	0	1	SEC	Statistics
7.	Constitution of India	0	2	0	0	1	VAC	SSH
8.	NCC/ NSS/ /Life Skill Activities	0	0	2	0	1	VAC	SA
9.	Indian Heritage and Culture	0	2	0	0	1	VAC	SSH
	Total	**12**	**06**	**14**	**12**	**22**		
		32						

II year II Semester (Semester 4)

Sl. No.	Course Title	L	T	P	SL	C	Course Category	Course Offered by
1.	Estimation Theory	3	0	2	3	4	Major-9	Statistics
2.	Statistical Hypotheses Testing	3	0	2	3	4	Major-10	Statistics
3.	Differential equations	3	2	0	3	4	Major-11	Mathematics
4.	Object Oriented Programming	3	0	2	3	4	Minor-4	ACSE/CSE
5.	Environmental Science	0	4	2	0	3	MDC	Chemistry
6.	Data Wrangling and Visualization	2	0	2	2	3	SEC	ACSE/CSE
7.	Work-in-Lieu of Course / Field Project /Inter-departmental Project/ Survey	0	0	2	0	1	Project/ MDC	
	Total	**14**	**06**	**12**	**14**	**23**		
		32						

L=Lecture; T= Tutorial; P= Practical; SL=Self Learning; C=Credits

III year I Semester (Semester 5)

Sl. No.	Course Title	L	T	P	SL	C	Course Category	Course Offered by
1.	Numerical Analysis	3	2	0	3	4	Major-12	Mathematics
2.	Design of Experiments	3	0	2	3	4	Major-13	Statistics
3.	Time Series Analysis	3	0	2	3	4	Major-14	Statistics
4.	Design and analysis of algorithms	3	0	2	3	4	Minor-5	ACSE/CSE
5.	Department Elective -1	2	2	0	2	3	Major-15 Elective	
6.	Quantitative Aptitude and Reasoning	0	2	0	0	1	MDC	Training
7.	Soft Skills Lab	0	0	2	0	1	AEC	EOFL/Training
	Total	**14**	**06**	**08**	**14**	**21**		
		28						

III year II Semester (Semester 6)

Sl. No.	Course Title	L	T	P	SL	C	Course Category	Course Offered by
1.	Department Elective -2*					3	Major-16; Elective	
2.	Department Elective -3*					3	Major-17; Elective	
3.	Machine Learning	3	0	2	3	4	Minor-6	ACSE/CSE
4.	Project	0	4	8	0	6	Project	
	Total					**16**		

** Candidate can acquire 6-8 credits through MOOCS (Swayam Based NPTEL) which can be* **considered** *equivalent to two of the electives.*

IV year I Semester (Semester 7)

Sl. No.	Course Title	L	T	P	SL	C	Course Category	Course Offered by
1.	Multivariate Analysis	3	0	2	3	4	Major-18	Statistics
2.	Regression Analysis	3	0	2	3	4	Major-19	Statistics
3.	Department Elective -4					3	Major- 20; Elective	
4.	Department Elective -5					3	Major- 21; Elective	
5.	Web Technologies	3	0	2	3	4	Minor-7	ACSE/CSE
6.	Computer Networks	3	0	2	3	4	Minor-8	ACSE/CSE
	Total					**22**		

IV year II Semester (Semester 8)

Sl. No.	Course Title	L	T	P	SL	C	Course Category	Course Offered by
1.	Major Project /Internship	0	6	18	0	12	Project	
	Total					**12**		

L=Lecture; T= Tutorial; P= Practical; SL=Self Learning; C=Credits

ELECTIVE POOLS

Department Elective -1

Sl. No.	Course Title	L	T	P	SL	C	Course Category
1.	Demography	2	2	0	3	3	Elective
2.	Advanced Probability Theory	2	2	0	3	3	Elective
3.	Official Statistics	2	2	0	3	3	Elective
4.	Actuarial Statistics	2	0	2	3	3	Elective
5.	Operations Research-I	2	2	0	3	3	Elective

Department Elective -2

Sl. No.	Course Title	L	T	P	SL	C	Course Category
1.	Biostatistics	2	2	0	2	3	Elective
2.	Econometrics	2	0	2	2	3	Elective
3.	Financial Statistics	2	0	2	2	3	Elective
4.	Operations Research-II	2	2	0	2	3	Elective

Department Elective -3

Sl. No.	Course Title	L	T	P	SL	C	Course Category
1.	Advanced Statistical Inference	2	0	2	2	3	Elective
2.	Stochastic Processes	2	0	2	2	3	Elective
3.	Reliability Theory and Survival Analysis	2	2	0	2	3	Elective

Department Elective -4

Sl. No.	Course Title	L	T	P	SL	C	Course Category
1.	Bayesian Methods	2	2	0	2	3	Elective
2.	Generalized Linear Models	2	0	2	2	3	Elective

Department Elective -5

Sl. No.	Course Title	L	T	P	SL	C	Course Category
1.	Statistical Methods in Clinical Trials	2	2	0	2	3	Elective
2.	Industrial Statistics	2	0	2	2	3	Elective
3.	Computational tools for Business Analysis	2	0	2	2	3	Elective

Member Secretary **Chairperson**

VIGNAN'S

DEPARTMENT OF MATHEMATICS AND STATISTICS

APPENDIX I (B)
COURSE STRUCTURE
B. Sc. Honors (Actuarial Science)

Sl. No.	Course Title	L	T	P	SL	C	Course Category	Course Offered by
1.	Orientation Program	0	4	0	0	2	VAC	SA

I year I Semester (Semester 1)

Sl. No.	Course Title	L	T	P	SL	C	Course Category	Course Offered by
1.	Technical English Communication	2	0	2	2	3	AEC	EOFL
2.	Descriptive Statistics-I	3	0	2	3	4	Major-1	Statistics
3.	Calculus	3	2	0	3	4	Minor-1	Mathematics
4.	Linear Algebra	3	2	0	3	4	Minor-2	Mathematics
5.	Statistical computing with MS-Excel	0	0	2	0	1	Major	Statistics
6.	Agentic Tools	0	2	2	0	2	SEC	ACSE
7.	IT Tools & Cyber Security	0	2	2	0	2	VAC	ACSE
8.	Self-Understanding and Gender Sensitization	0	0	2	0	1	VAC	SA
	Total	**11**	**08**	**12**	**10**	**21**		
			31					

I year II Semester (Semester 2)

Sl. No	Course Title	L	T	P	SL	C	Course Category	Course Offered by
1.	English Proficiency and Communication skills	0	2	2	0	2	AEC	EOFL
2.	Principles of insurance	3	0	2	3	4	Major-2	Mathematics
3.	Financial Mathematics	3	0	2	3	4	Major-3	Mathematics
4.	Descriptive Statistics-II	3	0	2	3	4	Major-4	Statistics
5.	Python Programming	2	0	4	2	4	Minor-3	ACSE/CSE
6.	Statistical Data Analysis using Jamovi / SPSS	0	0	2	0	1	SEC	Statistics
7.	Universal Human Values	0	2	0	0	1	VAC	SA
8.	Sports, Physical fitness, Games	0	0	2	0	1	VAC	P.Ed.
	Total	**11**	**04**	**16**	**11**	**21**		
			31					

L=Lecture; T= Tutorial; P= Practical; SL=Self Learning; C=Credits

II year I Semester (Semester 3)

Sl. No.	Course Title	L	T	P	SL	C	Course Category	Course Offered by
1.	Business English Communication / Language-2	0	2	2	0	2	AEC	EOFL
2.	Life and Health Contingencies	3	0	2	3	4	Major-5	MBA
3.	Project Appraisal and Term Structures	3	0	2	3	4	Major-6	MBA
4.	Inferential Statistics	3	0	2	3	4	Major-7	Statistics
5.	Financial Economics	3	0	2	3	4	Major-8	MBA
6.	Data Analytics using R Programming	0	0	2	0	1	SEC	Statistics
7.	Constitution of India	0	2	0	0	1	VAC	SSH
8.	NCC/ NSS/ /Life Skill Activities	0	0	2	0	1	VAC	SA
9.	Indian Heritage and Culture	0	2	0	0	1	VAC	SSH
	Total	**12**	**06**	**14**	**12**	**22**		
		32						

II year II Semester (Semester 4)

Sl. No.	Course Title	L	T	P	SL	C	Course Category	Course Offered by
1.	Joint Life and Pension Benefits	3	0	2	3	4	Major-9	MBA
2.	Stochastic Models	3	0	2	3	4	Major-10	Mathematics
3.	Mathematical Modelling	3	0	2	3	4	Major-11	Mathematics
4.	Differential equations	3	2	0	3	4	Minor-4	Mathematics
5.	Environmental Science	0	4	2	0	3	MDC	Chemistry
6.	Data Wrangling and Visualization	2	0	2	2	3	SEC	ACSE/CSE
7.	Work-in-Lieu of Course / Field Project /Inter-departmental Project/ Survey	0	0	2	0	1	Project/ MDC	
	Total	**14**	**06**	**12**	**14**	**23**		
		32						

L=Lecture; T= Tutorial; P= Practical; SL=Self Learning; C=Credits

III year I Semester (Semester 5)

Sl. No.	Course Title	L	T	P	SL	C	Course Category	Course Offered by
1.	Survival Models	3	0	2	3	4	Major-12	MBA
2.	Risk Models	3	0	2	3	4	Major-13	Mathematics
3.	Time Series Analysis	3	0	2	3	4	Major-14	Statistics
4.	Basic Accounting Concepts	3	0	2	3	4	Minor-5	MBA
5.	Department Elective -1	2	2	0	2	3	Major-15 Elective	
6.	Quantitative Aptitude and Reasoning	0	2	0	0	1	MDC	Training
7.	Soft Skills Lab	0	0	2	0	1	AEC	EOFL/Training
	Total	**14**	**04**	**10**	**14**	**21**		
			28					

III year II Semester (Semester 6)

Sl. No.	Course Title	L	T	P	SL	C	Course Category	Course Offered by
1.	Department Elective -2*					3	Major-16; Elective	
2.	Department Elective -3*					3	Major-17; Elective	
3.	Machine Learning	3	0	2	3	4	Minor-6	ACSE/CSE
4.	Project	0	4	8	0	6	Project	
	Total					**16**		

** Candidate can acquire 6-8 credits through MOOCS (Swayam Based NPTEL) which can be considered equivalent to two of the electives.*

IV year I Semester (Semester 7)

Sl. No.	Course Title	L	T	P	SL	C	Course Category	Course Offered by
1.	Insurance underwriting	3	0	2	3	4	Major-18	Mathematics
2.	Econometrics	3	0	2	3	4	Major-19	Statistics
3.	Department Elective -4					3	Major- 20; Elective	
4.	Department Elective -5					3	Major- 21; Elective	
5.	Regression Analysis	3	0	2	3	4	Minor-7	Statistics
6.	Bayesian Statistics	3	0	2	3	4	Minor-8	Statistics
	Total					**22**		

IV year II Semester (Semester 8)

Sl. No.	Course Title	L	T	P	SL	C	Course Category	Course Offered by
1.	Major Project Internship	0	6	18	0	12	Project	
	Total					**12**		

L=Lecture; T= Tutorial; P= Practical; SL=Self Learning; C=Credits

ELECTIVE POOLS

Department Elective -1

Sl. No.	Course Title	L	T	P	SL	C	Course Category
1.	Numerical Analysis	2	2	0	3	3	Elective
2.	Actuarial Statistics	2	0	2	3	3	Elective
3.	Operations Research-I	2	2	0	3	3	Elective

Department Elective -2

Sl. No.	Course Title	L	T	P	SL	C	Course Category
1.	Advanced Probability Theory	2	2	0	2	3	Elective
2.	Financial Statistics	2	0	2	2	3	Elective
3.	Operations Research-II	2	2	0	2	3	Elective

Department Elective -3

Sl. No.	Course Title	L	T	P	SL	C	Course Category
1.	Reliability Theory and Analysis	2	2	0	2	3	Elective
2.	Actuarial Profession	2	0	2	2	3	Elective

Department Elective -4

Sl. No.	Course Title	L	T	P	SL	C	Course Category
1.	Financial Markets	2	2	0	2	3	Elective
2.	Generalized Linear Models	2	0	2	2	3	Elective

Department Elective -5

Sl. No.	Course Title	L	T	P	SL	C	Course Category
1.	Actuarial Practice and Pension Funds	2	2	0	2	3	Elective
2.	Computational tools for Business Analysis	2	0	2	2	3	Elective

Member Secretary

Chairperson

VIGNAN'S

DEPARTMENT OF MATHEMATICS AND STATISTICS

APPENDIX II (A)

List of Courses that Enables Employability or Entrepreneurship or Skill Development

B. Sc. Honors (Statistics with Computer Science)

S. No.	Course Title	Year of introduction	Entrepreneurship/ Employability / Skill development
1.	Technical English Communication	2026	Skill development
2.	Descriptive Statistics-I	2026	Skill development
3.	Calculus	2026	Skill development
4.	Linear Algebra	2026	Skill development
5.	Statistical computing with MS-Excel	2026	Skill development
6.	Agentic Tools	2026	Employability
7.	IT Tools & Cyber Security	2026	Skill development
8.	English Proficiency and Communication skills	2026	Skill development
9.	Descriptive Statistics-II	2026	Skill development
10.	Elementary Probability Theory	2026	Skill development
11.	Real Analysis	2026	Skill development
12.	Python Programming	2026	Skill development
13.	Statistical Data Analysis using Jamovi / SPSS	2026	Skill development
14.	Business English Communication / Language-2	2027	Skill development
15.	Distribution Theory	2027	Skill development
16.	Sampling Theory	2027	Skill development
17.	Data Structures	2027	Skill development
18.	Database Management Systems	2027	Skill development
19.	Data Analytics using R Programming	2027	Skill development
20.	Estimation Theory	2027	Skill development
21.	Statistical Hypotheses Testing	2027	Skill development
22.	Differential equations	2027	Skill development
23.	Object Oriented Programming	2027	Skill development
24.	Data Wrangling and Visualization	2027	Skill development
25.	Numerical Analysis	2028	Skill development
26.	Design of Experiments	2028	Skill development
27.	Time Series Analysis	2028	Skill development
28.	Design and analysis of algorithms	2028	Skill development
29.	Quantitative Aptitude and Reasoning	2028	Employability
30.	Soft Skills Lab	2028	Employability
31.	Machine Learning	2028	Employability
32.	Multivariate Analysis	2029	Skill development
33.	Regression Analysis	2029	Skill development
34.	Web Technologies	2029	Skill development
35.	Computer Networks	2029	Skill development

Member Secretary

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VIGNAN'S

DEPARTMENT OF MATHEMATICS AND STATISTICS

APPENDIX II (B)

List of Courses that Enables Employability or Entrepreneurship or Skill Development

B. Sc. Honors (Actuarial Science)

S. No.	Course Title	Year of Introduction	Employability / Entrepreneurship / Skill development
1.	Technical English Communication	2026	Skill development
2.	Descriptive Statistics-I	2026	Skill development
3.	Calculus	2026	Skill development
4.	Linear Algebra	2026	Skill development
5.	Statistical computing with MS-Excel	2026	Skill development
6.	Agentic Tools	2026	Employability
7.	IT Tools & Cyber Security	2026	Skill development
8.	English Proficiency and Communication skills	2026	Skill development
9.	Principles of insurance	2026	Skill development
10.	Financial Mathematics	2026	Entrepreneurship
11.	Descriptive Statistics-II	2026	Skill development
12.	Python Programming	2026	Skill development
13.	Statistical Data Analysis using Jamovi / SPSS	2026	Skill development
14.	Business English Communication / Language-2	2027	Skill development
15.	Life and Health Contingencies	2027	Skill development
16.	Project Appraisal and Term Structures	2027	Skill development
17.	Inferential Statistics	2027	Skill development
18.	Financial Economics	2027	Entrepreneurship
19.	Data Analytics using R Programming	2027	Skill development
20.	Joint Life and Pension Benefits	2027	Entrepreneurship
21.	Stochastic Models	2027	Skill development
22.	Mathematical Modelling	2027	Skill development
23.	Differential equations	2027	Skill development
24.	Data Wrangling and Visualization	2027	Skill development
25.	Survival Models	2028	Skill development
26.	Risk Models	2028	Skill development
27.	Time Series Analysis	2028	Skill development
28.	Basic Accounting Concepts	2028	Entrepreneurship
29.	Quantitative Aptitude and Reasoning	2028	Employability
30.	Soft Skills Lab	2028	Employability
31.	Machine Learning	2028	Skill development
32.	Insurance underwriting	2029	Skill development
33.	Econometrics	2029	Skill development
34.	Regression Analysis	2029	Skill development
35.	Bayesian Statistics	2029	Skill development

Member Secretary

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VIGNAN'S
FOUNDATION FOR SCIENCE, TECHNOLOGY & RESEARCH

DEPARTMENT OF MATHEMATICS

APPENDIX III (A)

Comparison of Course Contents between R22 and R25 Curriculums in B.Sc. (Statistics and Computer Science)

(Should be maintained by BoS member for future reference)

S. No.	Course Title	% of Changes	Justification for Changes
1.	Technical English Communication	20%	New unit is added in Module-2
2.	Descriptive Statistics-I	20%	New unit is added in Module-2
3.	Calculus	20%	New unit is added in Module-2
4.	Linear Algebra	20%	New unit is added in Module-2
5.	IT Tools & Cyber Security	20%	New unit is added in Module-2
6.	English Proficiency and Communication skills	20%	New unit is added in Module-2
7.	Python Programming	20%	New unit is added in Module-2
8.	Business English Communication / Language-2	20%	New unit is added in Module-2
9.	Data Structures	20%	New unit is added in Module-2
10.	Database Management Systems	20%	New unit is added in Module-2
11.	Differential equations	20%	New unit is added in Module-2
12.	Object Oriented Programming	20%	New unit is added in Module-2
13.	Design of Experiments	20%	New unit is added in Module-2
14.	Design and analysis of algorithms	20%	New unit is added in Module-2
15.	Machine Learning	20%	New unit is added in Module-2
16.	Web Technologies	20%	New unit is added in Module-2
17.	Computer Networks	20%	New unit is added in Module-2
Average change		**20%**	

Member Secretary **Chairperson**

VIGNAN'S

DEPARTMENT OF MATHEMATICS

APPENDIX III (B)

Comparison of Course Contents between R22 and R25 Curriculums in B.Sc. (Actuarial Science)

(Should be maintained by BoS member for future reference)

S. No.	Course Title	% of Changes	Justification for Changes
1.	Technical English Communication	20%	New unit is added in Module-2
2.	Descriptive Statistics-I	20%	New unit is added in Module-2
3.	Calculus	20%	New unit is added in Module-2
4.	Linear Algebra	20%	New unit is added in Module-2
5.	IT Tools & Cyber Security	20%	New unit is added in Module-2
6.	English Proficiency and Communication skills	20%	New unit is added in Module-2
7.	Principles of insurance	20%	New unit is added in Module-2
8.	Financial Mathematics	20%	New unit is added in Module-2
9.	Python Programming	20%	New unit is added in Module-2
10.	Business English Communication / Language-2	20%	New unit is added in Module-2
11.	Life and Health Contingencies	20%	New unit is added in Module-2
12.	Project Appraisal and Term Structures	20%	New unit is added in Module-2
13.	Inferential Statistics	20%	New unit is added in Module-2
14.	Financial Economics	20%	New unit is added in Module-2
15.	Joint Life and Pension Benefits	20%	New unit is added in Module-2
16.	Stochastic Models	20%	New unit is added in Module-2
17.	Mathematical Modelling	20%	New unit is added in Module-2
18.	Differential equations	20%	New unit is added in Module-2
19.	Survival Models	20%	New unit is added in Module-2
20.	Risk Models	20%	New unit is added in Module-2
21.	Basic Accounting Concepts	20%	New unit is added in Module-2
22.	Machine Learning	20%	New unit is added in Module-2
23.	Insurance underwriting	20%	New unit is added in Module-2
24.	Econometrics	20%	New unit is added in Module-2
	Average % of Changes	**20.00%**	

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VIGNAN'S

DEPARTMENT OF MATHEMATICS

APPENDIX- IV (A)

List of New Courses for B.Sc. (Statistics with Computer Science minor) in the R25 Curriculum

Following are the new Courses

S. No.	Course Title	% of Changes	Justification for Changes
1.	Statistical computing with MS-Excel	100%	New Course is Introduced
2.	Agentic Tools	100%	New Course is Introduced
3.	Descriptive Statistics-II	100%	New Course is Introduced
4.	Elementary Probability Theory	100%	New Course is Introduced
5.	Statistical Data Analysis using Jamovi / SPSS	100%	New Course is Introduced
6.	Distribution Theory	100%	New Course is Introduced
7.	Sampling Theory	100%	New Course is Introduced
8.	Data Analytics using R Programming	100%	New Course is Introduced
9.	Estimation Theory	100%	New Course is Introduced
10.	Statistical Hypotheses Testing	100%	New Course is Introduced
11.	Data Wrangling and Visualization	100%	New Course is Introduced
12.	Numerical Analysis	100%	New Course is Introduced
13.	Time Series Analysis	100%	New Course is Introduced
14.	Quantitative Aptitude and Reasoning	100%	New Course is Introduced
15.	Soft Skills Lab	100%	New Course is Introduced
16.	Multivariate Analysis	100%	New Course is Introduced
17.	Regression Analysis	100%	New Course is Introduced

Following are the new electives

S. No.	Course Title	% of Changes	Justification for Changes
1.	Demography	100%	New Course is Introduced
2.	Official Statistics	100%	New Course is Introduced
3.	Actuarial Statistics	100%	New Course is Introduced
4.	Operations Research-I	100%	New Course is Introduced
5.	Biostatistics	100%	New Course is Introduced
6.	Financial Statistics	100%	New Course is Introduced
7.	Operations Research-II	100%	New Course is Introduced
8.	Advanced Statistical Inference	100%	New Course is Introduced
9.	Stochastic Processes	100%	New Course is Introduced
10.	Reliability Theory and Survival Analysis	100%	New Course is Introduced
11.	Bayesian Methods	100%	New Course is Introduced
12.	Generalized Linear Models	100%	New Course is Introduced
13.	Statistical Methods in Clinical Trials	100%	New Course is Introduced
14.	Industrial Statistics	100%	New Course is Introduced
15.	Computational tools for Business Analysis	100%	New Course is Introduced

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VIGNAN'S

DEPARTMENT OF MATHEMATICS

APPENDIX- IV (B)

List of New Courses for B.Sc. (Actuarial Science) in the R25 Curriculum

Following are the new Courses

S. No.	Course Title	% of Changes	Justification for Changes
1.	Statistical computing with MS-Excel	100%	New Course is Introduced
2.	Agentic Tools	100%	New Course is Introduced
3.	Descriptive Statistics-II	100%	New Course is Introduced
4.	Statistical Data Analysis using Jamovi / SPSS	100%	New Course is Introduced
5.	Data Analytics using R Programming	100%	New Course is Introduced
6.	Data Wrangling and Visualization	100%	New Course is Introduced
7.	Time Series Analysis	100%	New Course is Introduced
8.	Quantitative Aptitude and Reasoning	100%	New Course is Introduced
9.	Soft Skills Lab	100%	New Course is Introduced
10.	Regression Analysis	100%	New Course is Introduced
11.	Bayesian Statistics	100%	New Course is Introduced

Following are the new electives

S. No.	Course Title	% of Changes	Justification for Changes
1.	Numerical Analysis	100%	New Course is Introduced
2.	Actuarial Statistics	100%	New Course is Introduced
3.	Operations Research-I	100%	New Course is Introduced
4.	Financial Statistics	100%	New Course is Introduced
5.	Operations Research-II	100%	New Course is Introduced
6.	Reliability Theory and Analysis	100%	New Course is Introduced
7.	Actuarial Profession	100%	New Course is Introduced
8.	Financial Markets	100%	New Course is Introduced
9.	Generalized Linear Models	100%	New Course is Introduced
10.	Actuarial Practice and Pension Funds	100%	New Course is Introduced
11.	Computational tools for Business Analysis	100%	New Course is Introduced

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APPENDIX V (A)

B.Sc. Honors (Statistics with Computer Science Minor)

I. Details of IKS Components Incorporated in R25 Curriculum

Course Type	Total number of Courses	Number of Courses Incorporating IKS	Percentage
Majors	15	15	100%
Minors	8	8	100%
Department Electives	5	5	100%
SEC / MDC / AEC	7	7	100%
Total	**35**	**35**	100%

APPENDIX V (B)

B.Sc. Honors (Actuarial Science)

II. Details of IKS Components Incorporated in R25 Curriculum

Course Type	Total number of Courses	Number of Courses Incorporating IKS	Percentage
Majors	15	15	100%
Minors	8	8	100%
Department Electives	5	5	100%
SEC / MDC / AEC	7	7	100%
Total	**35**	**35**	100%

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VIGNAN'S

DEPARTMENT OF MATHEMATICS AND STATISTICS

APPENDIX VI (A)

B.Sc. Honors (Statistics with Computer Science Minor)

I. Details of SDG Mapped Courses in R25 Curriculum

Course Type	Total number of Courses	Number of Courses Mapped with SDGs	Percentage
Majors	15	15	100%
Minors	8	8	100%
Department Electives	5	5	100%
SEC / MDC / AEC	7	7	100%
Total	**35**	**35**	100%

APPENDIX VI (B)

B.Sc. Honors (Actuarial Science)

II. Details of SDG Mapped Courses in R25 Curriculum

Course Type	Total number of Courses	Number of Courses Mapped with SDGs	Percentage
Majors	15	15	100%
Minors	8	8	100%
Department Electives	5	5	100%
SEC / MDC / AEC	7	7	100%
Total	**35**	**35**	100%

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VIGNAN'S

DEPARTMENT OF MATHEMATICS AND STATISTICS

APPENDIX VII

Action Taken Report (ATR) on the suggestions given in earlier BoS meetings

S. No.	Action Point	Response
1.	Ensure stakeholder feedback is periodically reviewed and considered for curriculum enhancement	Feedback from alumni, industry partners, and students was collected through structured surveys and integrated into curriculum refinements.
2.	Improve communication of newly revised Program Outcomes (POs) to faculty and students	Department coordinators have initiated planning of orientation sessions; materials under development.
3.	Strengthening Self-Learning (SL) component evaluation mechanisms	A working group is developing standard evaluation rubrics for SL to be piloted in the upcoming semester.
4.	Align elective courses with current industry trends and emerging technologies	Preliminary review of electives completed; consultations with industry experts scheduled.

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