Holy Cross College (Autonomous)
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College with Potential for Excellence
Tiruchirappalli - 620 002, Tamilnadu, India.

School of Mathematical and Computation Sciences

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DEPARTMENT OF B. Voc. SOFTWARE DEVELOPMENT

S. No.	Title		2022 - 2023	2023 - 2024	2024 - 2025	2025 - 2026	2026 – 2027
1	Curriculum	Innovative Course	1	1	2	2	3
		Add-on Course	Certificate course in Robotic Process Automation	Diploma in Robotic Process Automation	Advanced Diploma in Robotic Process Automation.	Diploma in Virtual Architect design	Advanced Diploma in Virtual Architect design
		Certificate Course	2D & 3D Animation	Hardware Troubleshooting IoT for everybody	Google IT Automation with Python	AI for business Cyber security	Web 3 Technologies
		Industrial Relations Paper	Remote Sensing	Automation of Industry-4.0	Software Testing methods and tools	AI applications in E-Commerce and Medical field	Advanced techniques in Mobile App Development
		Outcome of Industrial Relation Paper	Placement-10%	Placement-10%	Placement-20%	Placement-30%	Placement-40%
		Question Bank & Revised Question Bank	4	7	Revision of QB	Revision of QB	Revision of QB
		Internship	Each year 2 internship (90 hrs)	Each year 2 internship (90 hrs)	Each year 2 internship (90 hrs)	Each year 2 internship (90 hrs)	Each year 2 internship (90 hrs)
2	Teaching, Leaning & Evaluation	Unique Teaching Methodology	-Adaptive Teaching Interactive/Participative -flipped classroom -Brain Storming - Think Pair Share - Role Play	Team Teaching Gamification Compensatory teaching	Creative Teaching	Cross Over Teaching	Design thinking

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Learning	- Blended Learning -Active Learning - Game Based Learning - Inquiry based learning - Project Based Learning	Problem based Learning Jigsaw Collaborative learning	Peer teaching Bite sized learning	ompetency based Learning Cooperative learning	Thinking based Learning Personalized learning
Evaluation	- Code Debugging - E-Quiz based on cognitive level -Concept mapping -formative Evaluation	Summative Evaluation Concept test	Criterion-referenced Evaluation Minute Paper	Documented Problem solution Application cards	Norm-referenced Evaluation
NPTEL/SWAYAM Online Course	3	3	4	4	4
E-Content	1	1	2	2	2
NET/SET to be qualified	1	2	3	-	-
Remedial Measures for slow learners Outcomes	Quizzes, assignment Peer tutoring Mind Mapping 50% of slow learners to be reduced	Using of Visual aids Oral Expression Developing Logical thinking skills 70% of slow learners to be reduced	Improving Analytical thinking, Providing worksheet for learning 80% of slow learners to be reduced	Reward based attainment of level by the student 90% of slow learners to be reduced	One to One tutoring with Instructional aids 100% of slow learners to be reduced
Pass Percentage	97%	98%	99%	99%	100%
University Rank	5	4	3	2	1

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		Visting Faculty	1	1	2	2	3
		Guest Faculty	2	2	2	3	3
3	Projects	Major Project	-	-	1	-	1
	Major / Minor	Minor Project	1	2	-	2	-
4	Seminar/ Conference/ Workshop	Intenational Conference		1		1	
		Workshop	Workshop-1	Workshop-2	Workshop-3	Workshop-3	Workshop-4
		National/International Seminar	National-1	International-1 National-1	National-2	International-1 National-1	National-2
		FDP	1	2	2	3	3
5	Research/ Publication	UG Project Publication	50%	60%	70%	80%	80%
		Research Guideship		1	2	-	-
		Ph.D. Registration	1	-	-	-	-
		Ph.D. Completed				1	
		Paper Publication	2	3	4	4	5
		Patents	1	1	2	2	3
6	Consultancy Extension Activities	Staff	1	2	3	3	3
		MoUs	2	3	3	4	5
		Collaboration	1	2	2	3	3

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7	**Infrastructure / Additional Information**	Infrastructure	IoT Lab	-	Hardware Lab	-	AR/VR LAB
			Department Magazine Intra Department Competition Internal Hackathon Ideathon	Inter Department Competition	Inter collegiate competition	Start-up programme	symposium
			Participation in SIH through HCIIC	Mobile App development for department Management System Exhibition –IoT cloud, Machine Learning	Design and development of prototype of Robots using Raspberry PI and Arduino boards	Projects on AR/VR related to Educational Sector	Prototype of AI system.
8	**Alumnae**	**Financial Contribution**	-	-	-	helping economically weaker student	Fund generation
		Non-Financial Contribution	-	-	Member in BoS	Resource person	Collaboration and curriculum design with industry through alumnae
9	**Best Practices**		Curriculum aligned with NSQF framework. Skill training in Job Oriented Course Internship Projects in each semester	Tie-up with NSDC Training partner	Entrepreneurship in software development	Teaching computer science for school students in under privileged villages	IoT Projects for adopted village

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PG DEPARTMENT OF COMPUTER APPLICATIONS

ANNUAL PLAN FOR THE YEAR 2022– 2023

S. No.	Title		2022 – 2023	2023 - 2024	2024 - 2025	2025 - 2026	2026 – 2027
1	**Curriculum**	**Innovative Course**	1	2	3	4	5
		Add-on Course	Certificate Course	Diploma Course	Advanced Diploma	Dual Diploma	Post Diploma
		Certificate Course	1	2	3	4	5
		Outcome of Industrial Relations Paper	Placement : 10%	Placement : 20%	Placement : 30%	Placement : 40%	Placement : 50%
		Question Bank & Revised Question Bank	3 Revision of I Year QB	4 Revision of I & II Year QB	Revision of I, II & III year QB	Revision of I, II & III year QB	Revision of I, II & III year QB
		Internship/Inplant Training at IT Companies/Offices/ Institutions…. During Semester Holidays	UG - 30 Hours PG – 30 Hours	UG - 30 Hours PG – 30 Hours	UG - 30 Hours PG – 30 Hours	UG - 30 Hours PG – 30 Hours	UG - 30 Hours PG – 30 Hours
2	**Teaching, Leaning & Evaluation**	**Unique Teaching Methodology**	- Flipped Classroom - Warm Up Teaching - Brain Storming - Role Play **Remedial Measures:** Peer Tutoring and recognizing their efforts High Achievers will be increased by 20% Slow Learners will be reduced by 20%	- Inquiry Based Teaching - Real Time Based Teaching **Remedial Measures:** AV Aids High Achievers will be increased by 40% Slow Learners will be reduced by 40%	- Problem Based - Case Study Based **Remedial Measures:** Individualized Education Plan High Achievers will be increased by 60% Slow Learners will be reduced by 60%	- Project Based - Panel Discussion **Remedial Measures:** Activity Based Training High Achievers will be increased by 80% Slow Learners will be reduced by 80%	- Scenario Based - Constructive Approach **Remedial Measures:** Real Time Application Based High Achievers will be increased by 100% Slow Learners will be reduced by 100%

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		Learning	- Blended Learning - Cooperative Learning - Software Error Debugging E-Content Based Learning – 40% SWAYAM Course : 1 Course per student	- Game Based Learning - Audio Visual Learning - Industrial Visits E-Content Based Learning – 50% SWAYAM Course : 2 Course per student	- Activity Based Learning - Project Based Learning E-Content Based Learning – 60% SWAYAM Course : 3 Course per student	- Peer Partner Learning - Personalized Learning E-Content Based Learning – 70% SWAYAM Course : 4 Course per student	- Open Door Learning - Expeditionary Learning E-Content Based Learning – 75% SWAYAM Course : 5 Course per student
		Evaluation: Question Bank	3 & Revision of I Year QB	4 Revision of I & II Year QB	Revision of I, II & III year QB	Revision of I, II & III year QB	Revision of I, II & III year QB
		NPTEL/SWAYAM Online Course	1 per Staff	2 per Staff	3 per Staff	4 per Staff	5 per Staff
		E-Content	1	2	3	4	5
		Pass Percentage	UG – 99% PG – 96%	UG – 100% PG – 97%	UG – 100% PG – 98%	UG – 100% PG – 99%	UG – 100% PG – 100%
		University Rank	MCA – 4th Rank BCA – 5th Rank	MCA – 3rd Rank BCA – 4th Rank	MCA – 2nd Rank BCA – 3rd Rank	MCA – 1st Rank BCA – 2nd Rank	MCA – 1st Rank BCA – 1st Rank
3	**Projects Major / Minor**	**Major Project**	1	2	3	3	4
		Minor Project	1	2	2	3	3

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			International - 1 (International Resource Persons : 20 % International Level Participants : 10%)	International – 2 (International Resource Persons : 40 % International Level Participants : 20%)	International – 2 (International Resource Persons : 60 % International Level Participants : 30%)	International – 3 (International Resource Persons : 80 % International Level Participants : 40%)	International – 3 (International Resource Persons : 100 % International Level Participants : 50%)
4	Seminar/ Conference/ Workshop Others	Conference					
		Workshop	3	4	5	6	7
		Seminar	1. Block Chain 2. Ethical Hacking & Cyber Security	International – 1 National - 1	International – 1 National - 2	International – 1 National - 3	International – 1 National - 4
		FDP	2	3	4	5	6
		Bootcamp/Ideathon/Hackathon	1	2	3	4	5
\5	Research/ Publication	UG Project Publication	50%	60%	70%	85%	100%
		PG Project Publication	50%	60%	70%	85%	100%
		Research Guideship	2	3	4	4	5
		Ph.D. Registration	1	2	3	4	5
		Ph.D. Completed	1	2	2	1	2
		Paper Publication	50% (Scopus – 10% UGC CARE – 40%)	60% (Scopus – 15% UGC CARE – 45%)	70% (Scopus – 20% UGC CARE – 50%)	80% (Scopus – 25% UGC CARE – 55%)	90% (Scopus – 30% UGC CARE – 60%)
		Patents	1	2	3	4	5
6	Consultancy Extension Activities	Staff	2	3	4	5	6
		MoUs	1	2	3	4	5
		Collaboration	1	2	3	4	5
		Out Reach Programmes	Computer Literacy to Adopted Village School Students	2	3	4	5

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7	Infrastructure / Additional Information		Upgradation of Systems in PG Lab	IoT Lab	Virtual Lab	Cloud Based V-Lab	Upgradation of UG Lab
			Based on Technology requirements the software will be installed				
8	Alumnae	Financial Contribution	Endowment for Needy	Providing Laptops	Pay Fees for Poor Children	Sponsor for an Event	Provision of Lab Facilities
		Non-Financial Contribution	Tie – Up	Resource Persons	Industrial Visit	Mentoring	Major Project
9	Best Practices		Computer Literacy for Blossom Children, Trans Gender children	Computer Literacy for Homeless children	Computer Literacy for Hearing Impaired	Computer Literacy for Women Entrepreneurs (Small Shops)	Computer Literacy for Non-Teaching

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HOLY CROSS COLLEGE (AUTONOMOUS), TIRUCHIRAPALLI – 620 002
PG DEPARTMENT OF COMPUTER SCIENCE

FIVE YEAR PLAN – 2022 – 2023 to 2026 – 2027

	2022 – 2023	2023 – 2024	2024 – 2025	2025 – 2026	2026 - 2027
CURRICULUM					
Student Projects / Field Projects	5	10	15	20	25
Innovative Course	1	2	4	5	6
Certificate Course	Web Technology / Web Designing	Distributed Accessing Techniques	E-security mechanisms	Media Exploration	NET Sequencing
Add-On Course	Certificate course in Web Technology	Diploma in Web Technology	Advanced Diploma in Web Technology	Honours Diploma in Web Technology	Post Diploma in Web Technology
Revised Question Bank Revision for number of courses with percentage	3 with 20%	5 with 40%	6 with 60%	8 with 80%	10 with 100%
Need Based Projects from Students	5	8	10	12	15
TEACHING LEARNING EVALUATION					
Teaching Methodologies	- Inquiry based Teaching - Blended mode	- Brain Storming - Role Play	- Reciprocal Teaching - Gamification	- Flipped Classrooms - Warm-up Teaching	- Problem based and Project Based Teaching methods
Remedial Courses **Slow Learners** o Time Management o Memory Empowerment Skills **Advanced Learners** • Behavioural Management Communication Skills	20% of learning capability and academic performance are increased	40% of memorization power and attention span are Improved	60 % of learning skills as well as mastering content are better developed	80% of Understanding effectively and have a better grasping power in learning	100% of students catch up to reach appropriate benchmarks.
Bridge Course (10 Hours) – Beneficiaries	20 %	40%	60%	80%	100%
Teaching Methods – Developing e-content	2	4	6	8	10
Learning Methods	- Blended and Cooperative Learning 2	- Electronic Learning 3	- Feynman Techniques 4	- Software based implementation and debugging 6	- Problem based and Project based Learning 8
NPTEL / SWAYAM Course by Staff	8	10	12	14	16
NET/ SET Qualified	2	3	4	5	6
Pass Percentage	97%	100%	100%	100%	100%
University Ranks	7	1 to 5	1	1	1

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Guest Faculty	2	2	2	2	2
Visiting Faculty	2	2	2	2	2
PROJECTS – MAJOR / MINOR					
Staff to apply for project proposals	1	2	3	4	4
MoUs	2	4	6	8	10
Linkages with Institutions/Industries	1	1	1	1	1
SEMINAR / CONFERENCE/ WORKSHOP/FDP					
Faculty Involvement in Organizing & Updating knowledge Organize International / National Seminar/ Conference / FDP/ Workshop in CS and Trans disciplinary streams (in Numbers)	5	7	8	10	12
Faculty Participation (State / Regional / National / International)	4	6	8	10	12
Training Programme for Non-Teaching Staff	2	4	6	7	9
To Organize Programmes with Faculty & Students Integrated Involvement					
Association Meetings Webinars	10	15	18	20	22
To organize need based Events for students	Digital Exhibition, Industrial Visit	Tours (Virtual) for Industries	Digital Exhibition, Industrial Visit	Virtual Tours for Industries	Digital Exhibition, Industrial Visit
PAPER PRESENTATION / PUBLICATIONS					
Research paper Publication by staff in referred Journal	4	8	10	12	15
Dept staff publish books on specific topics / Combined chapters as a book for current need	1	2	3	4	5
PG Student Project – Paper Publication	UGC Care - 2	UGC Care – 2 Scopus Index - 2	UGC Care – 3 Scopus Index - 3	UGC Care – 4 Scopus Index - 4	UGC Care – 5 Scopus Index - 5
UG Students group Project – Paper Presentations	4	8	12	14	15
PATENTS & COPYRIGHTS					
Patents	1	2	2	3	4
Copyrights	1	2	3	4	5

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CONSULTANCY / EXTENSION ACTIVITIES					
To provide need based consultancy services (Local Organizations)	4	8	10	12	15
To publicize the staff expertise in the web to offer consultancy in different areas	1	2	3	4	5
ADDITIONAL INFORMATION					
Career Placement Cell (CPC) – Students placements	20%	40%	60%	80%	100%
CS Welfare Schemes Identification of and services for persons with needs for higher education - in Rs.	10000	12000	15000	18000	20000
Welfare Fund – For needy and poor by Alumnae contributions	15000	30000	45000	60000	75000
Academic Services by Alumnae	4	8	10	12	15
Best Practices					
Alumnae Cell Alumnae Data Base Formation – in numbers	250	500	1000	1500	2000
CS Chronicles Magazine Release of Departmental Magazine – Every Year	✓	✓	✓	✓	✓
Projects in adapted village 1. Computer Science Coaching 2. Internet Access orientation 3. Online registration / Billing / Payments Schemes orientation	3	5	7	9	10

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PG DEPARTMENT OF DATA SCIENCE
DEPARTMENT FIVE YEAR PLAN FOR THE YEAR 2022– 2027

S.No.	Title		2022 – 2023	2023 - 2024	2024 - 2025	2025 - 2026	2026 – 2027
1	Curriculum	Innovative Course	1	1	1	2	2
		Add-on Course	Certificate Course on "Exploratory Data Analysis (EDA)"	Certificate Course on "Data Visualization using Tableau"	Advanced Certificate Course on "Professional Data Science"	Diploma Course on "Mastering Data Science with R & Python"	Advanced Diploma Course on "Predictive Analytics on Python"
		Internship/Inplant Training at IT Companies/Offices/Institutions…. During Semester Holidays	1	2	3	4	5
2	Teaching, Leaning & Evaluation	Unique Teaching Methodology	- Flipped Classroom - Inquiry Based Teaching - Warm Up Teaching Remedial Measures: High Achievers: 20% of students high achievers will be increased using Teaching Methodology. Slow Learners: 40% of students slow learners will be decreased using Peer Support Programme and Reward Scheme.	-Adaptive Teaching - Mistake-Led Teaching - Jigsaw Teaching Remedial Measures: High Achievers: 40% of students high achievers will be increased using Teaching Methodology. Slow Learners: 60% of students slow learners will be decreased using Cognitive Learning Styles.	- Brain Storming - Role Play - Problem solving method Remedial Measures: High Achievers: 60% of students high achievers will be increased using Teaching Methodology. Slow Learners: 70% of students slow learners will be decreased using Read, Recall, Review, Repeat method.	-Audio Video Tools - Story Board Teaching - Puzzles and Games Remedial Measures: High Achievers: 80% of students high achievers will be increased using Teaching Methodology. Slow Learners: 80% of students slow learners will be decreased using Activity Based Training.	- The Pause Procedure Teaching - The Reciprocal Teaching Remedial Measures: High Achievers: 100% of students high achievers will be increased using Teaching Methodology. Slow Learners: 100% of students slow learners will be decreased using Real Time Example Based Training.

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Learning	- Blended Learning - Cooperative Learning - Game Based Learning - Computer AssistedLearning • e-content 50% of learning through e-content • swayam 1 course per semester for students	- Project Based Learning - Industrial Visits - Software Error Debugging • e-content 60% of learning through e-content • swayam 2 courses per semester for students	- Technology Enhanced Active Learning (TEAL) - Reflective Observation Learning • e-content 70% of learning through e-content • swayam 2 courses per semester for students	- Flex Learning - Competency-Based Learning • e-content 70% of learning through e-content • swayam 3 courses per semester for students	- Peer Based Learning - Thinking-Based Learning • e-content 70% of learning through e-content • swayam 3 courses per semester for students
Evaluation: Question Bank & Revised Question Bank	1(Question Bank commencing from 2022)	2 (Preparation of Question Bank up to level K5)	3 (Preparation of Question Bank up to level K6)	Revision of QB	Revision of QB
NPTEL/SWAYAM Online Course	**4(1 course per staff)**	**8**	**8**	**12**	**16**
E-Content	**2 (1 course for 1 semester)**	**2**	**3**	**4**	**5**
Guest Faculty	**1**	**2**	**3**	**4**	**5**
Visiting Faculty	**PG – 1**	**PG – 1**	**PG – 2**	**PG – 2**	**PG – 3**
NET/SET to be qualified	**1**	**2**	**3**	**4**	**4 (100%)**
Pass Percentage	**PG – 100%**	**PG – 100%**	**PG – 100%**	**PG – 100%**	**PG – 100%**
University Rank	**M.Sc. – 5th Rank**	**M.Sc. – 4thRank**	**M.Sc. – 3rd Rank**	**M.Sc. – 2ndRank**	**M.Sc. – 1st Rank**

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3	Projects Major / Minor	Major Project	1	1	2	2	3
		Minor Project	1	2	2	3	3
4	Seminar/ Conference/ Workshop	Conference	International/National - 1 (10% of Resource Persons from International Level, 30% of participants from International Level)	International/National - 1 (30% of Resource Persons from International Level, 40% of participants from International Level)	International/National - 2 (40% of Resource Persons from International Level, 50% of participants from International Level)	International/National -2 (60% of Resource Persons from International Level, 70% of participants from International Level)	International/National - 2 (80% of Resource Persons from International Level, 100% of participants from International Level)
		Workshop	1. Data Analytics using python 2. Smart Technology 3. IOT and Embedded systems	Workshop - 4	Workshop – 5	Workshop – 6	Workshop – 6
		Seminar	1. Cryptocurrency 2.Hands-on practice with IBM Cloud using real data science tools	International – 1 National - 2	National - 3	International – 1 National - 3	International – 1 National - 3
		FDP	1. Green computing 2. Hands-on session on Machine Learning 3. Machine Intelligence	FDP – 3	FDP – 3	FDP – 3	FDP - 3
5	Research/Publication	PG Project Publication	Individual projects 50%	60%	70%	85%	100%
		Research Guideship	2	2	2	2	2
		Ph.D. Registration	1	2	-	-	-
		Ph.D. Completed	-	-	-	1	2
		Paper Publication	5 (UGC CARE JOURNALS)	7 (UGC CARE JOURNALS), 2 (SCOPUS INDEXED JOURNALS) with added Web of Science, IEEE, Elsevier	12 (UGC CARE JOURNALS), 4 (SCOPUS INDEXED JOURNALS) with added Web of Science, IEEE, Elsevier	18 (UGC CARE JOURNALS), 6 (SCOPUS INDEXED JOURNALS) with added Web of Science, IEEE, Elsevier	20 (UGC CARE JOURNALS), 8 (SCOPUS INDEXED JOURNALS) with added Web of Science, IEEE, Elsevier

Phone : 0431-2700637   Fax : 0431-2713312   E-mail : office@hcctrichy.ac.in   Website : www.hcctrichy.ac.in

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		Patents	1	2	3	3	3
		Consultancy Staff	2	3	4	5	6
		Functional MoUs	1	2	2	2	2
		Collaboration	1	2	3	3	4
		Out Reach Programmes	Awareness on Data Science course for all UG Students	2 (in Rural Areas)	3	4	5
6	Infrastructure / Additional Information		Upgradation of Systems in the PG Lab	Virtual Lab	IoT Lab	Cloud Environment	HADOOP LAB
7	Alumnae	Financial Contribution	-	2	3	4	5
		Non-Financial Contribution: • Placement • Resource Person • Certificate Course • Books	-	2	3	4	5
8	Best Practices		Orphanage home visits	Computer Literacy to rural school students	Recovery Programme	Training Programme for Non-Teaching Staff	Training Programme for House wives

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PG & RESEARCH DEPARTMENT OF MATHEMATICS- FIVE YEAR PLAN(2022-23 to 2026-27)

CURRICULUM

2022-2023	2023-2024	2024-2025	2025-2026	2026-2027
New Courses Introduced: **Major Elective** 1. R Programming 2. Python Programming	**New Courses to be Introduced:** Major Elective: 1. Matrix computation and its applications 2. Mathematical methods and applications 3. Vedic Mathematics	**New Courses to be Introduced:** Major Elective: 1. Cryptography 2. Mathematics for computer applications 3. Formal Languages and Automata Theory	**New Courses to be Introduced:** 1. Major Elective: Combinatorics 2. Major Elective: Mastering Mathematics using PYTHON 3. Popular Astronomy 4. Critical Reasoning	**New Courses to be Introduced:** 1. Major Elective: Essential Mathematics for Machine Learning 2. Mathematical tools for data analytics 3. Discrete Mathematics 4. Introduction to Mathematical Finance 5. Mathematics for IoT Devices Designing
Add On Program to be Introduced: Mathematics for Competitive Examinations- Certificate Course "Mathematics for RRB Examinations"	**Add On Program to be introduced:** Diploma Course " Mathematics for JEE/GATE Examinations"	**Add On Program to be introduced :** Advanced Diploma Course " Mathematics for Civil Service Examinations"	**Add On Program to be introduced:** Certificate Course " Mathematics for Banking Clerical Level Examinations"	**Add On Program to be introduced:** Diploma Course "Mathematics for Banking Probationary Level Examinations"

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TEACHING-LEARNINGEVALUATION

2022- 2023	2023- 2024	2024- 2025	2025- 2026	2026- 2027
Teaching: **1.Bridge Course in Dept Discipline:** One week Bridge Course on 'Foundations of Mathematics' for the I UG Students.	*Teaching:* **1.Bridge Course in Dept Discipline:** One week Bridge Course on 'Foundations of Mathematics' for the I UG Students.	*Teaching:* **1.Bridge Course in Dept Discipline:** One week Bridge Course on 'Foundations of Mathematics' for the I UG Students.	*Teaching:* **1.Bridge Course in Dept Discipline:** One week Bridge Course on 'Foundations of Mathematics' for the I UG Students.	*Teaching:* **1.Bridge Course in Dept Discipline:** One week Bridge Course on 'Foundations of Mathematics' for the I UG Students.
2.**Department Teaching Methodologies:** *Math 7TM* Brainstorming, Jig Saw Method, Mind Map, Problem Solving Method (Inductive / Deductive, Practical/ Analytical methods), Peer Group Learning: Group Discussion- Press Conference, Open ended Question Method- Heuristic (HOT)	2.**Department Teaching Methodologies:** *Math 8TM* Introducing Four Square Math House for Demonstration/ depiction of Mathematicians & their inventions along with 7 TM	2.**Department Teaching Methodologies:** *Math 9TM* Introduce Inquiry based group work along with 8 TM.	2.**Department Teaching Methodologies:** *Math 10TM* Introduce Virtual Reality/ Spatial thinking Methodology along with 9 TM	2.**Department Teaching Methodologies:** *Math 11TM* Introduce Started and Stand aloneTM(stimulate thinking and generate discussions)- National Improvement Hub along with 10 TM

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3. Remedial Teaching for Slow Learners: Through a continuous Remedial coaching from the entry test to semester Examinations, 75% of the Slow Learners to be reduced. NO- 10.	**3. Remedial Teaching for Slow Learners: Introduce 'Math Guided Worksheets' in order that 80% of the Slow Learners to be reduced.**	**3. Remedial Teaching for Slow Learners: Scrutinize/ update 'Math Guided Worksheets' tomake 85% of the Slow Learners to be reduced.**	**3. Remedial Teaching for Slow Learners: Add 20% of Math Guided Worksheets, so that 90% of the Slow Learners to be reduced.**	**3. Remedial Teaching for Slow Learners: Add 30% of Math Guided Worksheets and continuous follow up, so that 95 % of the Slow Learners to be reduced.**
4.Teaching for High Achievers: Extra Self Learning on Problem Solving, HOT – Open Ended Questions and Peer Group Learning – High Achievers to Slow Learners. Through this systematic follow up, 20% of High Achievers will be improved.	**4. Teaching for High Achievers:** Encourage them for Paper Presentation in Seminars/ HOT – Open Ended Questions and Peer Group Learning – High Achievers to Slow Learners. Through this systematic follow up, 30% of High Achievers will be improved.	**4. Teaching for High Achievers:** HOT – Open Ended Questions on Engineering problems, 40% of High Achievers will be improved.	**4. Teaching for High Achievers:** Making skills and knowledge in Practice- Project Statistical Survey, developing new Algorithms/ Error approximations. Through this systematic follow up, 50% of High Achievers will be improved.	**4. Teaching for High Achievers:** Making skills and knowledge in Practice- Project Statistical Survey, developing new Algorithms/ Error approximations/ seeking and identifying strategies and Reason out. Through this systematic follow up, 60% of High Achievers will be improved.

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5.University Rank Holders:	5.University Rank Holders:	5.University Rank Holders:	5.University Rank Holders:	5.University Rank Holders:
2019 to 2021 status: UG -9th/ 8th/3rd PG -13th/9th/12th UG- 2nd/1st rank PG: 9th/ 8th Rank	UG- 1st rank PG: 6th/7th Rank	UG- Maintaining 1st rank PG: 4th/5th Rank	UG: Maintaining 1st rank PG: 3rd/4th Rank	UG: Maintaining 1st rank vPG: 2nd/3rd Rank
6. Visiting and Guest Faculty: UG- MSBE- Aptitude Mathematics- Two Visiting Faculty SET/NET Classes through Math Genius Club and Industrial relations - Three Guest Faculty	**6. Visiting and Guest Faculty:** UG- MC: Linear Algebra Two Visiting Faculty SET/NET Classes through Math Genius Club and I-R- Three Guest Faculty	**6. Visiting and Guest Faculty:** UG- Major Core Papers-Two Visiting Faculty SET/NET Classes through Math Genius Club and Industrial Relations- Four Guest Faculty	**6. Visiting and Guest Faculty:** UG- Major Core- Three Visiting Faculty Math Genius Club Activity, Siliguri College and Industrial Relations- Five Guest Faculty	**6. Visiting and Guest Faculty:** UG- Major Core/MSBE Four Visiting Faculty Math Genius Club Activity, Siliguri College and Industrial Relations- Six Guest Faculty

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Learning:	Learning:	Learning:	Learning:	Learning:
1. **In-service Program for Teachers:** -Conduct Workshop on R and Python Programming for the Faculty of Mathematics	1. **In-service Program for Teachers:** -Conduct Workshop on 'Incorporating Technological tools-AI Chat bots, Multi user Online White board, Android Emulators and Virtual Reality 360 degree, Online Mind Map Softwares.	1. **In-service Program for Teachers:** -Conduct Workshop on 'Math Question Paper setting in K6 level '	1. **In-service Program for Teachers:** -Conduct Workshop on 'Designing Assignment/ Seminar components in higher level' -Updated version of LINGO software training for research Scholars	1. **In-service Program for Teachers:** -Conduct Workshop on ' Flipped Class Room with AI & IOT Tools'
2. Students Learning through E Contents/ Blogs: -One Course will be completely created as E Content Modules by the Staff - Assignments/ Seminar Portions will be posted through 22 Staff Blog IDS 3.SWAYAM Course Completion by Staff: 22 Courses will be completed by Staff (100%)	**2. Students Learning through E Contents/ Blogs** - One Course and ME will be completely created as E Content Modules by the Staff - Assignments/ Seminar/Quiz Portions will be posted through 26 Staff Blog IDS(20% increase)	**2. Students Learning through E Contents/ Blogs** - One Major Core Course and NME will be completely created as E Content Modules by the Staff - Assignments/ Seminar Portions will be posted through 22 Staff Blog IDS	**2. Students Learning through E Contents/ Blogs** One Major Course and MSBE will be completely created as E Content Modules by the Staff - Assignments/ Seminar Portions will be posted through 22 Staff Blog IDS	**2. Students Learning through E Contents/ Blogs** Two Major Core Courses will be completely created as E Content Modules by the Staff - Assignments/ Seminar Portions will be posted through 22 Staff Blog IDS
3.SWAYAM Course Completion by Staff: 22 Courses will be completed by Staff (100%)	**3.SWAYAM Course Completion by Staff:** 26 Courses will be completed by Staff (20% increase)	**3.SWAYAM Course Completion by Staff:** 30Courses will be completed by Staff (30% increase)	**3.SWAYAM Course Completion by Staff:** 34 Courses will be completed by Staff (40 % increase))	**3.SWAYAM Course Completion by Staff:** 38 Courses will be completed by Staff (50 % increase)

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Evaluation:	Evaluation:	Evaluation:	Evaluation:	Evaluation:
1.Question Banks -The Question Banks prepared in the last year 22 will be updated - 21 QBs will be prepared for this year - K5 Level Questions to be included in the Question Bank.	**1.Question Banks** -The Question Banks prepared in the last year (8+6) will be updated - (3+4) will be prepared for this year - K5 Level Questions to be included in the Question Bank.	**1.Question Banks** -The Question Banks prepared in the last year will be updated - 12+9 will be prepared for this year - K6 Level Questions to be included in the Question Bank.	**1.Question Banks** -The Question Banks prepared in the last year will be updated - 20 will be prepared for this year - K6 Level Questions to be included in the Question Bank.	**1.Question Banks** -The Question Banks prepared in the last year will be updated - 20 will be prepared for this year - K6 Level Questions to be included in the Question Bank.
2.Seminar/ Assignments: Evaluation Criteria will be based on K3 Level for Seminar/ Assignments/Quiz	**2.Seminar/ Assignments:** Evaluation Criteria will be based on K4 Level for Seminar/ Assignments.	**2.Seminar/ Assignments:** Evaluation Criteria will be based on K5 Level for Seminar/ Assignments	**2.Seminar/ Assignments:** Evaluation Criteria will be based on K5 Level for Seminar/ Assignments	**2.Seminar/ Assignments:** Evaluation Criteria will be based on K6 Level for Seminar/ Assignments

PROJECT MAJOR/ MINOR

2022- 2023	2023- 2024	2024- 2025	2025- 2026
Staff Research Projects: Applying minimum one FundedProjectsMinor Minor/Major/SeedGrant.	**Staff Research Projects:** Applyingtwo Funded ProjectsMinor/Major/SeedGrant.	**Staff Research Projects:** ApplyingthreeFundedProjectsMinor/Major/ SeedGrant.	**Staff Research Projects:** Applyingfour FundedProjectsMinor/Major/SeedGrant.
Students Research Project: MinimumtwoStudentforSummerProjects	**Students Research Project:** Minimum Three Students forSummerProjects	**Students Research Project:** MinimumthreeStudents forSummerProjects	**Students Research Project:** Minimum fourStudents forSummerProjects

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SEMINAR/CONFERENCE/WORKSHOP

2022- 2023	2023- 2024	2024- 2025	2025- 2026	2026- 2027
Through Math Association: 1.InternationalConference on 'Applications of Mathematics' with 100 Paper Presentations which includes 30 % of the Resource Persons and 10 % of the Participants from different Countries. - State level Inter School /Inter-CollegiateCompetitio nsMathSpark'22 10 % of the Participants from different Districts. - Lecture Session on 'Value Based Individual'by Alumnae/ RetiredStaff of our College	**Through Math Association:** InternationalConferenceon'Mathe maticsinCollaborative Learning and Research' which includes 30 % of the Resource Persons and 10 % of the Participants from different Countries -Launch of COIL- Collaborative Online Interactive Learning- Meeting the Experts across the World -Inter-CollegiateCompetitionsMathSpark'2 3	**Through Math Association:** International Workshop on 'MathSoftwaresinResearc h' which includes 30 % of the Resource Persons and 10 % of the Participants from different Countries -Inter-CollegiateCompetition sMathSpark'24 - Lecture Session on 'Value Based Individual'by Alumnae/ RetiredStaff of our College	**Through Math Association:** InternationalConference on 'Design of Algorithms' which includes 30 % of the Resource Persons and 10 % of the Participants from different Countries -One Day WorkshopforPGstudents on Summer Projects Inter-CollegiateCompetitions MathSpark'25 - Lecture Session on 'Value Based Individual'by Alumnae/ RetiredStaff of our College	**Through Math Association:** InternationalConference on 'Mathematical Applications in IoT'which includes 30 % of the Resource Persons and 10 % of the Participants from different Countries -One Day WorkshopforPGstudents on Summer Projects Inter-CollegiateCompetitions MathSpark'26 -Lecture Session on 'Social Responsible Individual'by Alumnae/ RetiredStaff of our College

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| Through Math Genius Club:

1.SET/NET CoachingforPG Students As an outcome minimum two students will clear the Examinations.
2. In Commemoration of Ramanujam Day, collaborative activity will be conducted with the Department of Mathematics Salesian College,Siliguri, West Bengal | Through Math Genius Club:

1.SET/NET Coachingfor PG Students .As an outcome minimum three students clear the Examinations.

2. Two collaborative activities will be conducted with the Collaborated Intuitions
3. Lecture Session on 'Value Based Individual'by Alumnae/ RetiredStaff of our College | Through Math Genius Club:

1.SET/NET Coachingfor PG Students .As an outcome minimum four students clear the Examinations.

2. Three collaborative activities will be conducted with the Collaborated Institutions | Through Math Genius Club:
1.SET/NET Coachingfor PG Students .As an outcome minimum three students clear the Examinations.

2. Four collaborative activities will be conducted with the Collaborated Institutions | Through Math Genius Club:
1.SET/NET Coachingfor PG Students .As an outcome minimum four students clear the Examinations.

2.Five collaborative activities will be conducted with the Collaborated Institutions |

RESEARCH/PUBLICATION

2022- 2023	2023- 2024	2024- 2025	2025- 2026	2026- 2027
1.**Staff Research work:** - 19publications inInternational /Scopus IndexedJournals. -20 Paper Presentations inInternationalConferences - OneBookPublicationbythe faculty -PatentFiling -1 -Receiving Guideship for Research – 2 - To be completed Ph.D – 3 -To be register for Ph.D – 2	1.**Staff Research:** 1. 23publications inInternational /Scopus Indexed Journals (20% increase) -24 Presentations of Papers inInternationalConferencesbyStaff(20 % increase) -Two Book Publicationsbythefaculty -PatentFiling -2 -Getting Guideship for Research – 3 - To be completed Ph.D – 2/3	1.**Staff Research:** - 27publications inInternational /Scopus IndexedJournals(20 % increase) -29 Presentations of Papers inInternationalConferencesbyStaff (20 % increase) -Two BookPublicationsby thefaculty -PatentFiling -3 -Getting Guideship for Research – 4 - To be completed Ph.D 2	1.**Staff Research:** - 31publications inInternational /Scopus IndexedJournals(20 % increase) -35 Presentations of Papers inInternationalConferencesbyStaff (20 % increase) -Three Book Publicationsby the faculty -PatentFiling -3 -Getting Guideship for Research – 5 - To be completed Ph.D – 1	1.**Staff Research:** - 34publications inInternational /Scopus IndexedJournals(20 % increase) -41Presentations of Papers inInternationalConferencesbyStaff (20 % increase) -Three Book Publicationsby thefaculty -PatentFiling -3 -Getting Guideship for Research – rest of the staff - 100% Ph.D.Completion

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2.Students' Research Work:	2. Students' Research Work:	2. Students' Research Work:	2. Students' Research Work:	2. Students' Research Work:
-Launch 'Research Drive for Students' -UG Projects- Individual Projects 22 will be assigned. Out of which Minimum 2 (10%) will be published in ISBN Journals. - 30 PG Projects will be published in ISBN/SCI Indexed Journal (50 %) --20% of the PG Students will be presented Papers in International Conferences	**-UG Projects- Individual Projects 22 will be assigned. Out of which Minimum 4 (20%) will be published in ISBN Journals.** **- 36 PG Projects will be published in ISBN/SCI Indexed Journals(60 %)** **-30% of the PG Students will be presented Papers in International Conferences**	**-UG Projects- Individual Projects 22 will be assigned. Out of which Minimum 6 (30%) will be published in ISBN Journals.** **- 42 PG Projects will be published in ISBN/SCI Indexed Journals (70 %)** **--40% of the PG Students will be presented Papers in International Conferences**	**-UG Projects- Individual Projects 22 will be assigned. Out of which Minimum 8 (40%) will be published in ISBN Journals.** **- 42 PG Projects will be published in ISBN/SCI Indexed Journals (70 %)** **--50% of the PG Students will be presented Papers in International Conferences**	**-UG Projects- Individual Projects 22 will be assigned. Out of which Minimum 10 (60%) will be published in ISBN Journals.** **- 42 PG Projects will be published in ISBN/SCI Indexed Journals (70 %)** **--60% of the PG Students will be presented Papers in International Conferences**

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CONSULTANCY/EXTENSIONACTIVITIES

2022- 2023	2023- 2024	2024- 2025	2025- 2026	2026- 2027
Extension: Teaching basicMathematics in aadopted village, 50 School Children	**Extension:** Introducing 'Math Guided Worksheets' Teaching basicMathematics in aadopted village – 60 school Children(10% increase).	**Extension:** Practicing 'Math Guided Worksheets' Teaching basicMathematics in aadopted village – 70 school Children(20% increase).	**Extension:** Practicing 'Math Teaching You Tube Videos' Teaching basicMathematics in aadopted village – 70 school Children(20% increase).	**Extension:** Practicing 'Math Teaching You Tube Videos' Teaching basicMathematics in aadopted village – 70 school Children(20% increase).
Staff Consultancy: -Membership inVarious bodies-University Examiners,DoctoralCommitte eMembers- 50 %- 11 Members - Staff Consultants- 2	**Staff Consultancy:** -Membership inVarious bodies-University Examiners,DoctoralCommitte eMembers- 60 %- 13 Members - Staff Consultants- 3	**Staff Consultancy:** -Membership inVarious bodies-University Examiners,DoctoralCommitte eMembers- 70 %- 15 Members - Staff Consultants- 4	**Staff Consultancy:** -Membership inVarious bodies-University Examiners,DoctoralCommitte eMembers- 80 %- 19 Members - Staff Consultants- 4	**Staff Consultancy:** -Membership inVarious bodies-University Examiners,DoctoralCommitte eMembers- 80 %- 19 Members - Staff Consultants- 4
Collaboration: Two Collaborations - with the Department of Mathematics Salesian College, Siliguri, West Bengal and Department of Data Science, St Joseph College, Tiruchirappalli	**Collaboration:** Three Collaborations – with the Department of Mathematics Salesian College, Siliguri, West Bengal and Industrial Relation Sector and Maris Stella College, Andhra Pradesh	**Collaboration:** Four Collaborations - with the Department of Mathematics Salesian College, Siliguri, West Bengal and Industrial Relation Sector and Maris Stella College, Andhra Pradesh and Mount Carmel College, Bengaluru.	**Collaboration:** Four Collaborations - with the Department of Mathematics Salesian College, Siliguri, West Bengal and Industrial Relation Sector and Maris Stella College, Andhra Pradesh and Mount Carmel College, Bengaluru.	**Collaboration:** Five Collaborations - with the Department of Mathematics Salesian College, Siliguri, West Bengal and Industrial Relation Sector and Maris Stella College, Andhra Pradesh and Mount Carmel College, Bengaluru & Kerala University.

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INFRASTRUCTURE/ADDITIONALINFORMATION

2022- 2023	2023- 2024	2024- 2025	2025- 2026	2026- 2027
Infrastructure: Preparation andInstallation of 'MathInfoCorner'whichcontains Origin ofMathematicalconceptsand current affairs inMathematics.	**Infrastructure:** Required Books/ Journals relevant toMathematics Research to beaddedinthedepartmentlibrary. -Strengthening Math InfoCorner according to theStaff/Students'Reviews	**Infrastructure:** Preparation and Installation of 'Mathematics Lab' with the required Physical Models/ Working and Non Working Models/ Softwares	**Infrastructure:** - Strengthening Mathematics Lab with Mat lab software and Lindo Software.	**Infrastructure:** - Strengthening Mathematics Lab with IoT equipment Models - -Launching of Math You tube videos onthe real life applications ofMathematics for the Learner'susage
Capability Enhancement Program -Encouraging/ follow upofStudentsinCapability EnhancementProgrammes(EDC/Driving/ Volunteer Servicesin Lib/Lang Lab)- Min 30	**Capability Enhancement Program** -Encouraging/ follow up ofStudentsinCapability EnhancementProgrammes(EDC/Driving/ Volunteer Servicesin Lib/Lang Lab)- Min 40	**Capability Enhancement Program** -Encouraging/ follow up ofStudentsinCapability EnhancementProgrammes(EDC/Driving/ Volunteer Servicesin Lib/Lang Lab)- Min 50	**Capability Enhancement Program** -Encouraging/ follow up ofStudentsinCapability EnhancementProgrammes(EDC/Driving/ Volunteer Servicesin Lib/Lang Lab)- Min 60	**Capability Enhancement Program** -Encouraging/ follow up ofStudentsinCapability EnhancementProgrammes(EDC/Driving/ Volunteer Servicesin Lib/Lang Lab)- Min 70
Department Placement: Placement from the Department - 20 by identifying min 5 placement sectors	**Department Placement:** Placement from the Department - 25 by identifying min 7 placement sectors.	**Department Placement:** Placement from the Department - 30 by identifying min 10 placement sectors.	**Department Placement:** Placement from the Department - 35 by identifying min 13 placement sectors.	**Department Placement:** Placement from the Department - 40 by identifying min 15 placement sectors.
Alumnae: -Strengthening Alumnaethrough FB/Website Instagram Present Alumnae – 1300 To be improved: No- 1430 (10 % increase)	**Alumnae**: -Strengthening Alumnaethrough FB/Website/Instagram To be improved: No- 1430 (10 % increase)	**Alumnae**: -Strengthening Alumnaethrough FB/Website/Instagram To be improved: No- 1495(15 % increase)	**Alumnae**: -Strengthening Alumnaethrough FB/Website/Instagram To be improved: No- 1560(20% increase)	**Alumnae**: -Strengthening Alumnaethrough FB/Website/Instagram To be improved: No- 1625(25% increase)

- **Alumnae Contribution**	- Alumnae Contribution	- Alumnae Contribution	- Alumnae Contribution	- Alumnae Contribution
- Alumnae Sponsored books 5 to be added in the Department Library/ one student Scholarship One Lecture sessions by Alumnae to be organized	- **Alumnae Sponsored books 8 to be added in the Department Library** -**Two Lecture sessions by Alumnae to be organized**	- **Alumnae Sponsored books 12 to be added in the Department Library** -**Three Lecture sessions by Alumnae to be organized**	-**Alumnae Sponsored books 15 to be added in the Department Library** -**Three Lecture sessions by Alumnae to be organized**	- **Alumnae Sponsored books 20 to be added in the Department Library** -**Four Lecture sessions by Alumnae to be organized**

Department Best Practice

2022- 2023	2023- 2024	2024- 2025	2025- 2026	2026- 2027
Strengthening Department towards **'Teaching and Research'** **Through** - Inclusion of diversified courses based on the need of the Students/ Effective Teaching Math 7TM including E contents and blogs/ Launching Research Drive for Students/ Signing Collaborations/ Installing Math Info Corner/ increasing Staff & Students' research, Presentations & Publications.	Strengthening Department towards ' COIL' **Through** Inclusion of diversified courses emphasizing Research / Launching Research Drive for students/ following Collaborative Learning Activities- COIL/ increasing Staff & Students' research, Presentations & Publications	Strengthening Department towards' **Mathematics & Programming Skills'** **Through** Inclusion of diversified courses on Programming Skills / Effective Teaching Math 9TM/ Inculcate K5 thinking through Assignment & Seminar / conducting International Workshop on Programming Skills/ Following Collaborative activities through Collaborations / Installing Math LAB.	Strengthening the Department towards' **NExT- New Experience in Teaching'** **Through** Inclusion of diversified courses/ Math 10TM/ Research Drive/ Guided Worksheets/Installing Math Lab/ Preparing and Launching You Tube Videos on 'Joyous Math Teaching & Learning' / increasing Staff & Students' research, Presentations & Publications	Strengthening Department towards' **Excellence in Mathematics Teaching, IoT&Social Responsible graduates'** **Through** -Inclusion of courses on IoT/ Math 11TM/ conducting IoT Workshops/Practicing Research Drive Activities- more students' research works/Practicing more Collaborative activities on social responsibility.

Dr. (Ms) HORNE IONA AVERAL
M.Sc.,M.Phil.,MD(Acu).,FBSS.,Ph.D.,
IQAC COORDINATOR
Associate Professor in Zoology
Holy Cross College,Tiruchirappalli-2.