Holy Cross College (Autonomous)
Nagercoil – 629 004
Affiliated to Manonmaniam Sundaranar University, Tirunelveli
Nationally Accredited with A+ Grade (CGPA 3.35) by NAAC IV Cycle
An ISO 9001:2015 Certified Institution

SSR
2019-2020
to
2023-2024

6.1.1 The institutional governance and leadership are in accordance with the vision and mission of the Institution and it is visible in various institutional practices such as NEP implementation, sustained institutional growth, decentralization, participation in the institutional governance and in their short term and long term Institutional Perspective Plan

IMPLEMENTATION OF NEP 2020- SAMPLE

MULTIDISCIPLINARY / INTERDISCIPLINARY

EVALUATION OF ATTAINMENT OF OUTCOMES

COs attainment: Attainment of course outcomes for each course is calculated through different components included in Continuous Internal Assessments and End semester examination.

Bench marks and Criteria for the attainment of COs:
 To meet the expected level of attainment a student must score more than 50% of the marks to assess the attainment of COs. The threshold limit can be fixed based on the level of students.
Attainment level 1: If at least 60% of the students met the expected level of attainment.
Attainment level 2: If at least 70% of the students met the expected level of attainment.
Attainment level 3: If at least 80% of the students met the expected level of attainment.

Attainment process:

Step 1: The faculty should fix a question paper pattern (blue print) of the type of questions that would be asked, the different cognitive levels it would address and the course outcome that the student would attain. The pattern and question paper prepared by respective faculty should be verified by the HoDs. A sample format is given below:

B.Sc. (Name of the program)
Semester (Mention the semester)
Major Core xxx – (Mention the course)
Course Code: xxxx
Assessment summary for End Semester Examination

Course Outcome	Cognitive Level	End Semester examination of questions and marks Based on K level and CO
CO 1	Remember	3 (3)
CO 2	Understand	8 (41)
CO 3	Apply	3 (3)
CO 4	Analyse	5 (15)
CO 5	Evaluate	1 (8)
Total		20 (70)

QUESTION PAPER – Blue print

PART	Q.No.	COGNITIVE LEVEL (CL) with No. of question and Marks						Total marks
		K1 – R	K2 – U	K3 – AP	K4- AN	K5 – E	K6 - C	
Part A 10 x 1 = 10 marks	1.	1 (1)						1
	2.			1 (1)				1
	3.	1 (1)						1
	4.				1 (1)			1
	5.				1 (1)			1
	6.	1 (1)						1
	7.			1 (1)				1
	8.				1 (1)			1
	9.		1 (1)					1
	10.			1 (1)				1
Part B 5 x 4 = 20 marks	11.a		1 (4)					4
	11.b							
	12.a		1 (4)					4
	12.b							
	13.a		1 (4)					4
	13.b							
	14.a				1 (4)			4
	14.b							
	15.a		1 (4)					4
	15.b							
Part C 5 x 8 = 40 marks	16.a		1 (8)					8
	16.b							
	17.a		1 (8)					8
	17.b							
	18.a				1 (8)			8
	18.b							
	19.a					1 (8)		8
	19.b							
	20.a		1 (8)					8
	20.b							
No. of CL based Questions with marks		3 (3)	8 (41)	3 (3)	5 (15)	1 (8)		70
No. of CO based Questions with marks		CO 1 3 (3)	CO 2 8 (41)	CO 3 3 (3)	CO 4 5 (15)	CO 5 1 (8)		70
Total		3	41	3	15	8		70

The question paper is prepared based on the above blue print.

Sample question paper format:

HOLY CROSS COLLEGE (AUTONOMOUS)	
Accredited with 'A+' Grade (CGPA 3.35 - IV Cycle) by NAAC	
Nagercoil – 629 004	
Kanyakumari District, Tamilnadu.	
B.Sc. Zoology	
Semester V	
Major Core VII – Ecology and Toxicology	
Course Code: ZC2053	
Question Paper	

Time: 3 hrs.				Max. marks: 70
Q. No.	Questions		K Level	Course Outcome Level
	Part A (10 x 1 = 10 marks)			
	Answer all the questions			
1.	Study of the relationship of a group of organisms which are associated together as a unit in relation to its environment is -------- a. Autoecology b. Synecology c. Terrestrial ecology d. Population		R	CO-1
2.	The morphological changes that occur in daphnia as a result of change in temperature is called ----------- a. Cyclomorphosis b. Regeneration c) Rensch's rule d) Menkin's rule		Ap	CO-3
3.	The ratio between birth rate and death rate is ------------ a) Mortality b) Natality c) Vital index d) Growth rate		R	CO-1

4.	Identify the diagram.	An	CO-4
5.	Match the following and choose the correct answer 1. Effect of an abrupt transition between two communities 2. Region of transition between two communities. 3. A position occupied by a species in a community 4. A distinct species occupying a particular habitat. 　　　　　A　　B　　C　　D 　　a)　　1　　2　　3　　4 　　b)　　4　　3　　2　　1 　　c)　　2　　1　　4　　3 　　d)　　3　　2　　4　　1	R	CO-1
6.	What does this image indicate? Give a one-word answer.	An	CO-3
7.	Match the following and choose the correct answer. A. Systemic effect　　　　1. Site of contact B. Immediate effect　　　 2. Permanent C. Irreversible effect　　　3. 24 hrs. D. Local effect　　　　　 4. Body system 　　　　　A　　B　　C　　D 　　a)　　1　　3　　2　　4 　　b)　　4　　3　　2　　1 　　c)　　2　　3　　4　　1 　　d)　　3　　2　　4　　1	Ap	CO-3
8.	**Assertion(A):** Knock knee syndrome is caused by fluoride. **Reason(B):** Soil, water and air contain fluorine as fluoride. a.　　Statement 'A' and Statement 'B' are correct. b.　　Statement 'A 'and 'B' are wrong. c.　　Statement 'A' is correct and Statement 'B' wrong. d.　　Statement 'A' is wrong and Statement 'B' correct.	An	CO-4
9.	What is the cause of red tide? 　　a) Algal bloom 　　b) Aflatoxin 　　c) Acid rain. 　　d) Eutrophication	U	CO-2
10.	The G20 environment meeting was held on 28ᵗʰ July 2023 in Chennai. What was the main area discussed? Answer in one sentence.	Ap	CO-4
Part B (5 x 4 = 20 marks)			
11.	a. Discuss the different branches of ecology. 　　　　　　　　(OR) b. Explain mutualism and commensalism as an interspecific relationship.	U	CO-2
12.	a. Explain population growth and regulation. 　　　　　　　　(OR) b. Explain nitrogen cycle and its role in the environment.	U	CO-2
13.	a. Explain the structure of a community. 　　　　　　　　(OR) b. Enumerate the types of animal distribution.	U	CO-2
14.	a. Differentiate toxicokinetics and toxicodynamics. 　　　　　　　　(OR) b. Distinguish between; 　　　i. LC₅₀ and LD₅₀ 　　　ii. *in vivo* and *ex vivo* toxic experiments	An	CO-4
15.	a. Explain Bhopal episode and Chernobyl disaster. 　　　　　　　　(OR) b. Compare bioaccumulation, biomagnification and biotransformation.	U	CO-2

	Part C (5 x 8 = 40 marks)		
16.	a. Discuss the biological effects of temperature. (OR) b. Summarize the adaptations of desert living animals.	U	CO-2
17.	a. Explain the structure of an ecosystem. (OR) b. Discuss population growth and regulation.	U	CO-2
18.	a. Analyse the concept of climax and pattern of succession. (OR) Appraise the applications of remote sensing in agriculture, food and fisheries management.	An	CO-4
19.	Assess the toxic effects of heavy metals and radiations to living organisms. (OR) Evaluate the effect of toxicants on hematological and biochemical parameters of fish.	E	CO-5
20.	a. Explain the types of pollutants and its effect on the environment. (OR) b. Explain the different methods of Waste water treatment.	U	CO-2

Step 2: Considering the percentage of marks (related to each COs) asked in Internal test and end semester examination, the average weightage percent of each CO was calculated as an average of internal test/external exams for further calculation of direct attainment.

EXAMINATION – Sample

			EXTERNAL																70
			CO 1 (6)				CO 2 (29)				CO 3 (22)				CO 4 (13)				
S.NO	Register Number	Name of the student	Part-A	Part-B	Part-C	CO1 Total	Part-A	Part-B	Part-C	CO2 Total	Part-A	Part-B	Part-C	CO3 Total	Part-A	Part-B	Part-C	CO4 Total	Grand Total
1	2021AUZ092	VINNARASI A	2	4	-	6	1	8	13	22	2	3	14	19	2	-	0	2	49
2	2021AUZ133	AADHARSH A G K	0	4	-	4	1	8	14	23	2	2	14	18	1	-	4	5	50
3	2021AUZ134	ABI ESTHER R	2	4	-	6	0	9	14	23	2	4	13	19	4	-	7	11	59
4	2021AUZ135	ABINAYA SREE S	2	4	-	6	1	6	14	21	2	3	11	16	4	-	2	6	49
5	2021AUZ136	ABISHAI I	2	4	-	6	1	4	11	16	2	2	12	16	4	-	2	6	44
6	2021AUZ138	ANTO MONISHA S	2	4	-	6	1	5	13	19	2	3	14	17	4	-	6	10	54
7	2021AUZ139	ANU FLOWERCY A	2	4	-	6	1	7	14	22	1	4	14	19	4	-	7	11	58
8	2021AUZ140	ANUSHA K	0	0	-	0	0	2	0	2	0	0	3	3	1	-	0	1	7
9	2021AUZ141	DEENU F	2	2	-	4	1	6	13	20	2	2	10	14	3	-	1	4	42
10	2021AUZ142	DHARSHINI N	2	4	-	6	0	10	15	25	0	4	16	20	2	-	4	6	58
11	2021AUZ144	KARUNYA R	1	4	-	5	1	7	15	23	2	0	7	9	3	-	8	11	40
12	2021AUZ145	KENISH MITHIYAL J	1	3	-	4	1	7	11	19	0	2	12	14	1	-	4	5	42
13	2021AUZ146	MATHIJA M	1	4	-	5	1	11	8	20	2	0	11	13	2	-	4	6	48
14	2021AUZ147	NISO LIN RAJEEI	2	4	-	6	0	9	15	24	2	4	14	20	3	-	8	11	61
15	2021AUZ150	REMITHAS NIS	2	3	-	5	0	5	6	11	2	3	6	11	3	-	2	5	32
16	2021AUZ151	SARANYA K	2	4	-	6	1	12	15	28	2	4	15	21	4	-	7	11	66
17	2021AUZ152	SELVA	2	4	-	6	0	12	15	27	1	3	15	19	4	-	0	4	56

No	Reg No	Name																	Total
		LEKSHMI S																		
18	2021AU Z153	SHAFNA SHERI N M	2	3	-	5	1	6	5	12	2	2	10	14	4	-	2	6	37
19	2021AU Z154	UBASANA J	2	4	-	6	0	12	15	27	2	4	14	20	4	-	6	10	63
20	2021AU Z155	VARSHINI J	2	4	-	6	1	5	14	20	1	3	15	19	3	-	2	5	50
21	2021AU Z407	AKISHA MOL S	1	2	-	3	1	10	8	19	2	4	6	12	3	-	0	3	37
22	2021AU Z408	SOWMIYA T	2	2	-	4	1	7	13	21	2	3	10	15	3	-	7	10	47
23	2021AU Z443	ABISH A R	2	3	-	5	1	3	14	18	2	4	11	17	3	-	3	6	46
24	2021AU Z449	BERCLIN S	2	4	-	6	1	12	13	26	2	4	14	20	4	-	8	12	64
25	2021AU Z450	PRADISHA S	2	3	-	5	1	4	14	19	2	4	16	22	3	-	0	3	49
26	2021AU Z451	SAHAYA MINI A	2	4	-	6	1	8	14	23	2	4	13	19	3	-	2	5	53
	Percentage of students scoring more than the target		96				89				92							54	92
	Level		3				3				3							2	3

Measuring Course Outcomes attained through External Examinations: Target
Attainment level 1: 50% students scoring 50% and more marks
Attainment level 2: 60% students scoring 50% and more marks
Attainment level 3: 70% students scoring 50% and more marks
Measuring Course Outcomes attained through Internal Tests:
Attainment level 1: 50% students scoring 50% and more marks
Attainment level 2: 60% students scoring 50% and more marks
Attainment level 3: 70% students scoring 50% and more marks

DIRECT CO ATTAINMENT –INTERNAL AND EXTERNAL –sample

CO	Assessment through continuous internal assessment test (Average) %	Assessment through End Semester Examination %
CO1	50	96
CO2	92	89
CO3	75	92
CO4	73.5	54

The course outcomes for all the courses are calculated in terms of percentage using the formula.

$$CO\ x\ in\ \% = \frac{\text{Marks obtained by the students in } COx}{\text{Maximum marks allotted in } COx} \times 100$$

Where, x= [1 to N], N= Number of COs.

Each course outcome is calculated for all the students based on marks obtained by the students.

$$CO\ x\ Attainment\ in\ \% = \frac{\text{No.of Students scored more than or equal to 50\% of Marks in } COx}{\text{No of Students}} \times 100$$

Where, x= [1 to N], N= Number of Course Outcome

Course Outcome	Assessment Tool	Percentage of students scoring more than the target	Attainment level	Attainment of Course Outcome
CO1	Internal Test (40%)	50	1	(0.4x1) + (0.6x3) = 2.2
	End Semester Examination (60%)	96	3	
CO2	Internal Test (40%)	92	3	(0.4x3) + (0.6x3) = 3
	End Semester Examination (60%)	89	3	
CO3	Internal Test (40%)	75	3	(0.4x3) + (0.6x3) = 3

	End Semester Examination (60%)	92	3	
CO4	Internal Test (40%)	74	3	(0.4x3) + (0.6x1) = 1.8
	End Semester Examination (60%)	54	1	

Formula : Direct Attainment = 0.4 x Internal Test Average +0.6 x End Semester Examination average

CO ATTAINMENT LEVEL

Attainment level 1: 50% students scoring 50% and more marks
Attainment level 2: 60% students scoring 50% and more marks
Attainment level 3: 70% students scoring 50% and more marks

Indirect attainment

Course exit survey (Sample)

Course exit survey can be conducted on the defined COs or related to course outcomes of that course.

Questionnaire for students on Course Exit Survey

Program   :
Semester   :
Course title   :
Course code   :
Name   :
Register Number :

CO	I am able to	Strongly agree 100	Agree 75	Neutral 50	Disagree 25	Strongly disagree 0
CO - 1	define abiotic, biotic and limiting factors, community structure, ecological succession, wild life conservation and toxicants.					
CO - 2	comprehend the physical and chemical properties of environment, biological effects, biogeochemical cycles, wild life conservation, environmental pollution and toxicology.					
CO - 3	identify the biotic factors, characteristics of communities, endangered species and causes for environmental problems.					
CO - 4	assess the structure and function of ecosystem, community, habitat for sustainable management of environmental system and for the remediation.					
CO - 5	evaluate the impact of environment changes on the biosphere.					

Indirect Method of CO Assessment: (Survey Based) - Weightage: (20%)

Course Outcomes	Number of Student response Rating					Total response	Attainment %	Attainment grade
	100	75	50	25	0			
CO1	15	10	3	-	-	28	15x100+10x75+3x50/28=86	86/100x3=2.57
CO2								
CO3								
CO4								
CO5								

100- Strongly agree, 75-Agree , 50 – Neutral, 25- Disagree, 0 -Strongly disagree

CO ATTAINMENT TEMPLATE

Course Outcomes	Direct Attainment	Indirect attainment
CO1	2.2	2.57
CO2		
CO3		
CO4		
CO5		

CO ATTAINMENT AND ATTAINMENT GAP TEMPLATE

CO	Target	Direct attainment	Indirect attainment	Total CO attainment	Gap (Target-Total)
CO - 1	2	2.2	2.57	2.27	+0.27
CO - 2					
CO - 3					
CO - 4					
CO - 5					

Target to be fixed by the course in-charge

Formula : Total CO attainment = (0.80xdirect) + (0.20x indirect)
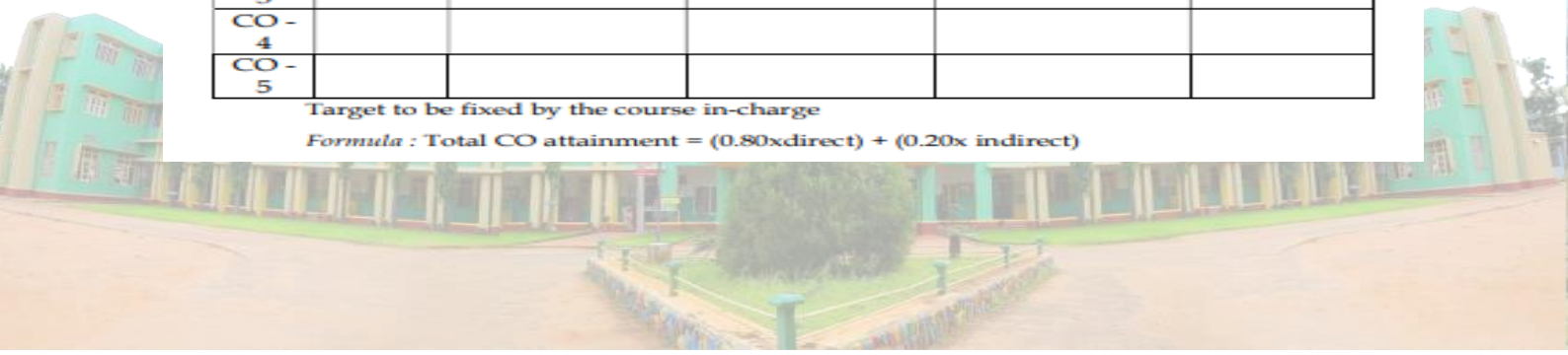
POs AND PSOs ATTAINMENT

Step 1: The course outcomes for all courses were mapped with defined POs and PSOs with correlation levels -, 1, 2, and 3. The correlation levels were defined as: No correlation – Correlation level "-", Low - Correlation level 1 Moderate - Correlation level 2 , High - Correlation level 3. Attainment of each COs for all courses was calculated as described above.

Step 2: Attainment values of respective COs were mapped against their correlated POs and PSOs. Average values for each PO/PSO were considered as final attainment for the respective course. Similarly, attainment values of COs with each correlated POs and PSOs have been calculated for all courses.

Mapping with Programme Outcomes: sample

Course outcome attainment COs (A)		B									
		PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4
CO1	2.2	3	1	3	2	2	1	3	3	3	3
CO 2	3	3	3	3	2	3	2	3	3	2	2
CO 3	3	3	2	3	2	2	2	2	3	3	1
CO 4	1.8	3	2	3	2	3	2	3	3	3	3
CO 5	0.8	3	2	3	2	3	3	3	3	3	3
Total	10.8	15	10	15	10	13	10	14	15	14	12
Average	1.8	3	2	3	2	2.6	2	2.8	3	2.8	2.6

CO-PO attainment
Calculation of PO1 = (Column A x Column B) / Sum (Column B) = 2.16
Calculation of PO2 = (Column A x Column B) / Sum (Column B) = 2.24
Calculation of PO3 = (Column A x Column B) / Sum (Column B) = 2.16
Calculation of PO4 = (Column A x Column B) / Sum (Column B) = 2.16
Calculation of PO5 = (Column A x Column B) / Sum (Column B) = 2.09
Calculation of PO6 = (Column A x Column B) / Sum (Column B) = 2.08
 CO-PSO attainment
Calculation of PSO1 = (Column A x Column B) / Sum (Column B) = 2.1
Calculation of PSO2 = (Column A x Column B) / Sum (Column B) = 2.16
Calculation of PSO3 = (Column A x Column B) / Sum (Column B) = 1.96
Calculation of PSO4 = (Column A x Column B) / Sum (Column B) = 1.95
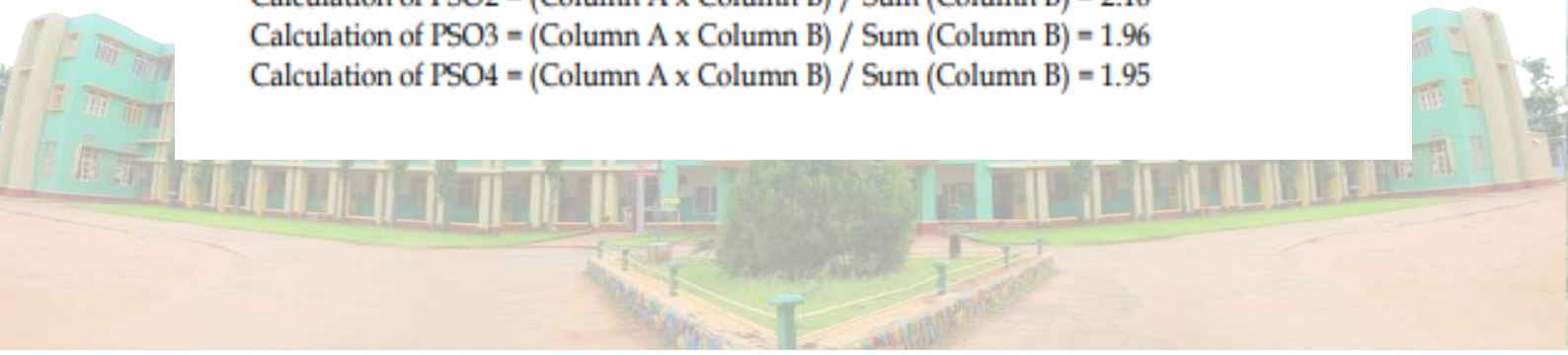
Indirect assessment was based on various surveys for POs and PSOs attainments like Graduate Exit Survey, Alumni Survey, and parent's feedback and taking their average.

Indirect attainment

Graduate exit survey

Kindly rate the following criteria on a scale of 1-5.

S.No	Questions	PO	Criteria Rating				
			Excellent	Very Good	Good	Average	Poor
1	How will you rate your ability to utilize scientific knowledge to pursue higher studies in the relevant field ?	1					
2	What is the level of competency you have developed to create innovative ideas and enhance entrepreneurial skills for economic independence?	4					
3	How far the skills that you have learnt were helpful to face challenging competitive examinations that offer rewarding careers?	2					
4	Leadership qualities gained because of the initiatives taken by the college and the respective departments to reflect upon green initiatives and take responsible steps to build a sustainable environment.	3					
5	Capability to handle ethical issues with social responsibility	5					
6	Confidence to communicate effectively and collaborate successfully with peers to become competent professionals.	6					

5. Excellent 4. Very Good 3. Good 2. Average 1. Poor

Alumni Survey Form

Kindly rate the following criteria on a scale of 1-5.

5.Excellent 4. Very Good 3. Good 2.Average 1.Poor (Criteria Rating)

Overall Rating for attainment of your PEOs & POs.

1. The curriculum has supported the higher education/ employability/ entrepreneurship need.
2. Benefit from value added and certificate courses seminars /conferences /workshops and internship conducted during your course.
3. Communication and presentation skills and leadership qualities obtained from the co-curricular and extracurricular activities has enriched the career.
4. Competence to function as a team and to show professional efficiency in your job.
5. Extent of Ethical, social and environmental values inculcated, helping you to relate issues with societal needs.

Step 3: Final Attainment of POs and PSOs:

• **Direct attainment**: Obtained by taking averages of all CO-PO and CO-PSO attainment matrices defined for all courses for all semesters.

• **Indirect attainment**: Obtained from attainment values of POs and PSOs of surveys including
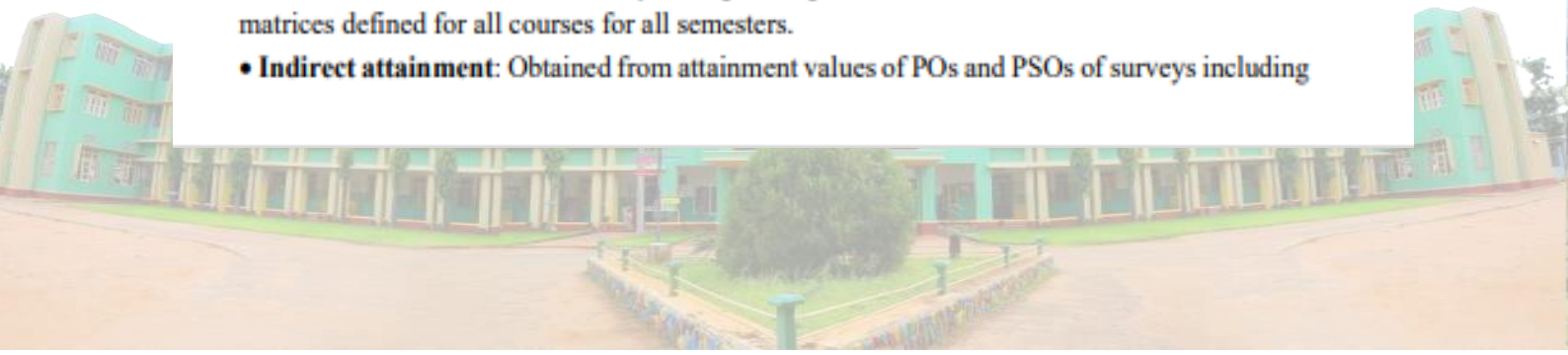
Graduate exit, Alumni, and Parents feedback. Final attainments were calculated by considering 80% of direct assessment & 20% of the indirect assessment.

PROGRAM LEVEL PO & PSO DIRECT ATTAINMENT:

The PO and PSO attainment for Program is calculated using the following formula.

$$\text{POm Direct Attainment} = \frac{\sum_{i=1}^{x} POm\ Attainment\ of\ course(i)}{x}$$

Where, m = Program Outcomes varies from 1 to 12
X = Number of Courses mapped with POm

$$\text{PSOm Direct Attainment} = \frac{\sum_{i=1}^{x} PSOm\ Attainment\ of\ course(i)}{x}$$

Where, m = Program Specific Outcomes varies from 1 to 4
X = Number of Courses mapped with PSOm

PO- DIRECT AND INDIRECT ATTAINMENT –Template

PO	Direct attainment (Based on CO-PO attainment)	Indirect attainment (Based on exit survey)	Total PO attainment
PO - 1			
PO - 2			
PO - 3			
PO - 4			
PO - 5			

Total PO attainment: (0.80 x direct) + (0.20 x indirect)

ACTION TAKEN

Levels of achievement are set by the OBE committee in discussion with the experts based on last three year's results. These levels will be reviewed and will be updated each year by incorporating the previous year's result.

OBE attainment results will be analyzed department wise and necessary actions will be taken to improve the level of attainment if it is low or no attainment. In addition, each department will pursue initiatives to improve the quality of teaching and syllabus to increase the target value.

CONCLUSION

Student progress mapping helps teachers identify the academic strength and weakness and assess the outcome attainment of each student. OBE attainment is reviewed department wise and remedial measures are taken when the attainment value is less than the target value in terms of curriculum, teaching, learning and evaluation. Overall, this assessment process enables the college to identify areas for improvement, address curricular gaps, and bridge the same to enhance the overall quality of education provided to the students.
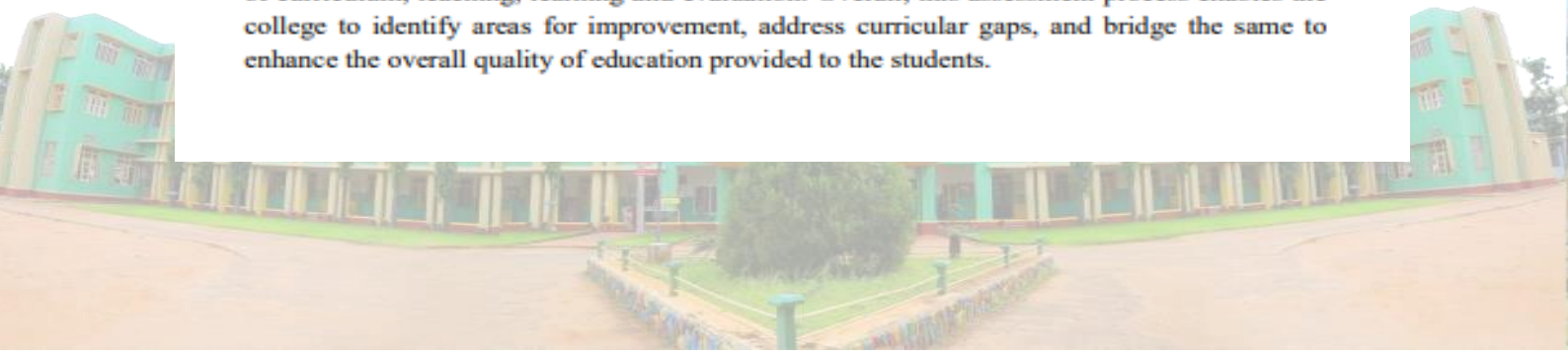
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SKILL DEVELOPMENT

Course Structure
Distribution of Hours and Credits

Curricular Courses

Course	S I	S II	S III	S IV	S V	S VI	Total	
							Hours	Credits
Part I –Language	6 (3)	6 (3)	6 (3)	6 (3)	-	-	24	12
Part II-English	6 (3)	6 (3)	6 (3)	6 (3)	-	-	24	12
Part-III								
Core Course Core Project	4 (4) 4 (4)	4 (4) 4 (4)	4 (4) 4 (4)	4 (4) 4 (4)	5 (4)+ 5 (4)+ 5 (4)+ 5 (4)	6(5)+ 6(4)+ 6(4)	70	61
Elective /Discipline Specific Elective Courses	6 (5)	6 (5)	6 (5)	6 (5)	4(3) 4 (3)	5(3) 5(3)	42	32
Part IV								
Non-major Elective	2 (2)	2 (2)	-	-	-	-	4	4
Skill Enhancement Course	-	2 (2)	1 (1) 2 (2)	1 (1) 2 (2)	-		8	8
Foundation Course	2(2)	-	-	-	-	-	2	2
Value Education	-	-	-	-	2 (2)	-	2	2
Summer Internship /Industrial Training	-	-	-	-	(2)	-	-	2
Environmental Studies	-	-	1	1 (2)	-	-	2	2
Extension activity	-	-	-	-	-	(1)	-	1
Professional Competency Skill						2 (2)	2	2
Total	30 (23)	30 (23)	30 (22)	30 (24)	30 (26)	30 (22)	180	140

Co-curricular Courses

Course	S I	S II	S III	S IV	S V	S VI	Total
LST (Life Skill Training)	-	(1)	-	(1)			2
Skill Development Training (Certificate Course)	(1)						1
Field Project		(1)					1
Specific Value-added Course	(1)		(1)				2
Generic Value-added Course				(1)		(1)	2
MOOC		(1)		(1)		(1)	3
Student Training Activity: Clubs & Committees / NSS				(1)			1
Community Engagement Activity: RUN				(1)			1
Human Rights Education					(1)		1
Gender Equity Studies						(1)	1
Total							15

Total number of Compulsory Credits   =Academic credits +Non-academic credits: 140 + 15

Courses Offered

Semester I

Course	Course Code	Title of the Course	Credits	Hours/Week
Part I	TU231TL1 FU231FL1	Language: Tamil French	3	6
Part II	EU231EL1	English	3	6
Part III	MU231CC1	Core Course I: Algebra & Trigonometry	4	4
	MU231CC2	Core Course II: Differential Calculus	4	4
	MU231EC1	Elective Course I: Allied Mathematics I- Algebra and Differential Equations	5	6

Course	Course Code	Title of the Course	Credits	Hours/Week
Part IV	MU231NM1	Non Major Elective NME I: Mathematics For Competitive Examinations- I	2	2
	MU231FC1	Foundation Course: Bridge Mathematics	2	2
		Total	**23**	**30**

Semester II

Course	Course Code	Title of the Course	Credits	Hours/Week
Part I	TU232TL1 FU232FL1	Language: Tamil French	3	6
Part II	EU232EL1	English	3	6
Part III	MU232CC1	Core Course III: Coordinate and Spatial Geometry	4	4
	MU232CC2	Core Course IV: Integral Calculus	4	4
	MU232EC1	Elective Course II: Vector Calculus and Fourier Series	5	6
Part IV	MU232NM1	Non-major Elective NME II: Mathematics for Competitive Examinations- II	2	2
	MU232SE1	Skill Enhancement Course SEC I: Introduction to Computational Mathematics	2	2
		Total	**23**	**30**

Co-curricular Courses

Part	Semester	Code	Title of the Course	Credit
Part V	I & II	UG232LC1	Life Skill Training I: Catechism	1
		UG232LM1	Life Skill Training I: Moral	
	I	UG231C01 UG231C--	Skill Development Training (SDT) Certificate Course	1
	II	MU232FP1	Field Project	1
	I & III	MU231V01- MU231V--/ MU233V01 – MU233V--	Specific Value-added Course	1+1
	II, IV& VI	-	MOOC	1+1+1
	III & IV	UG234LC1	Life Skill Training II: Catechism	1
		UG234LM1	Life Skill Training II: Moral	
	IV & VI	UG234V01- UG234V--/ UG236V01-	Generic Value-added Course	1 +1

		UG236V--		
	I - IV	UG234ST1	Student Training Activity – Clubs & Committees / NSS	1
	IV	UG234CE1	Community Engagement Activity - RUN	1
	V	UG235HR1	Human Rights Education	1
	VI	UG236GS1	Gender Equity Studies	1
			Total	**15**

Specific Value-added Course

S. No.	Course code	Title of the course	Total hours
I	MU231V01	Web Designing using HTML	30

c) Skill Enhancement Course (SEC) - Computer Literacy

Internal Components

Component	Marks
Objective type questions (30x1)	30
Exercise (Book) compulsory (2x10)	20
Total	50

External Components

Component	Marks
Exercise 1	20
Exercise 2	10
Procedures for both Exercises	20
Total	50

d) Skill Enhancement Course (SEC) - Meditation and Exercise
Internal Components

Component	Marks
Objective type questions (20x1)	20
Exercise (2x10)	20
Assignment	10
Total	50

External Components

Component	Marks
Quiz	20
Written test : Open choice –10 out of 15 questions (10x3)	30
Total	50

e) Ability Enhancement Course (AEC) - Environmental Studies

Internal Component

Component	Marks
Project Report	30
Viva voce	20
Total	50

External Component

Component	Marks
Quiz	20
Written Test : Open choice – 10 out of 15 questions (10x3)	30
Total	50

PROMOTING WELL-BEING WITH YOGA AND MEDITATION, NEP 2020

Courses offered for B.Sc Chemistry programme

Semester	Course	Course code	Title of the course	Hours /week	Credits
I	Part I	TL2011/ FL2011	Language	6	4
	Part II	GE2011	General English	6	4
	Part III	CC2011	Major Core I : General Chemistry - I	4	4
		CC20P1	Major Practical I : Volumetric Analysis and Inorganic Preparation	2	-
		CA2011	Allied I Theory: Chemistry for Life Sciences	4	3
		CA20P1	Allied I Practical : Volumetric and Organic Analysis	2	-
	Part IV	APS201	Add on course I : Professional English for Physical Sciences-I	2	2
		CNM201	Non Major Elective (NME) :Applied Chemistry - I	2	2
		SEC201/ SEC202	Meditation and Exercise/ Computer Literacy	2	2
	Part V	FCV201	Foundation course I : Values for Life	-	-
		STP201	STP - Clubs & Committees / NSS	-	-
II	Part I	TL2021/ FL2021	Language	6	4
	Part II	GE2021	General English	6	4
	Part III	CC2021	Major Core II : General Chemistry - II	4	4
		CC20P1	Major Practical I : Volumetric Analysis and Inorganic Complex Preparation	2	2
		CA2021	Allied I Theory: Chemistry of Biomolecules	4	3
		CA20P1	Allied I Practical : Volumetric and Organic Analysis	2	2
	Part IV	APS202	Add on course II : Professional English for Physical Sciences-II	2	2
		CNM202	Non Major Elective (NME) :Applied Chemistry - II	2	2
		SEC201/ SEC202	Meditation and Exercise / Computer Literacy	2	2
	Part V	FCV201	Foundation course I : Values for Life	-	1
		SLP201	Service Learning Programme (SLP) : Community Engagement Course	-	-
		STP201	STP : Clubs & Committees / NSS	-	-

DISTANCE EDUCATION/ONLINE EDUCATION

FOCUS ON OUTCOME BASED EDUCATION (OBE)

STATE LEVEL WORKSHOP ON "OUTCOME BASED EDUCATION –

THE HALLMARK OF ACADEMIC QUALITY"
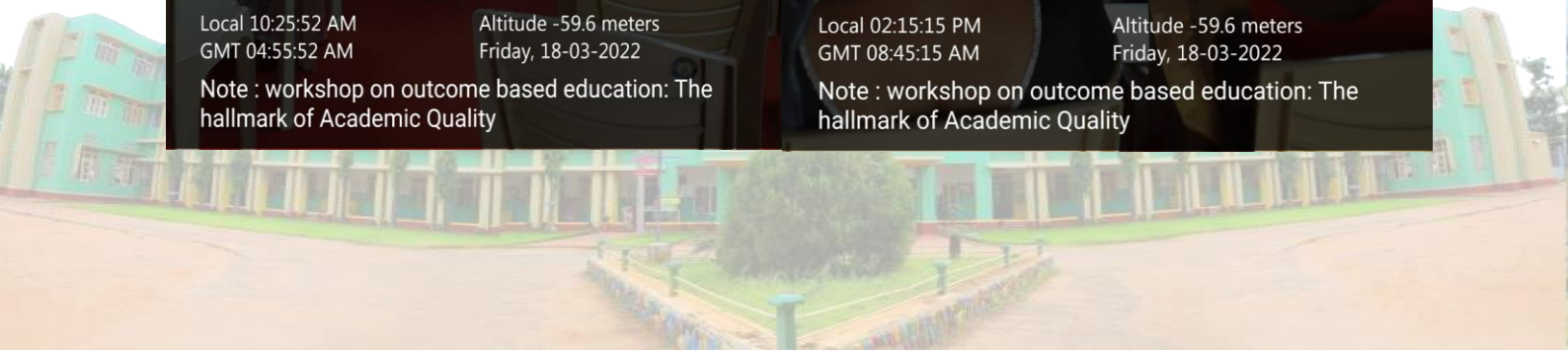
APPROPRIATE INTEGRATION OF INDIAN KNOWLEDGE SYSTEM (TEACHING IN INDIAN LANGUAGE, CULTURE, USING ONLINE COURSE)

A STUDY ON VEDIC MATHEMATICS AND ITS APPLICATION

Project report submitted to Holy Cross College (Autonomous), Nagercoil in partial fulfilment of the requirements to the award of the degree of

BACHELOR OF SCIENCE IN MATHEMATICS

By

S. Heama	Reg No: 2017019
B. Primmiya	Reg No: 2017039
S.J. Sigithra	Reg No: 2017044
S.M. Sugitha	Reg No: 2017045

Under the guidance of

Dr. S. Sujitha, M.Sc., M.Phil., B.Ed., Ph.d.,

Assistant Professor

DEPARTMENT OF MATHEMATICS (AIDED)
HOLY CROSS COLLEGE (AUTONOMOUS)
(RE-ACCREDITED WITH A+ GRADE (CGPA 3.35))
(AFFILIATED TO MANONMANIAM SUNDARANAR UNIVERSITY)
NAGERCOIL – 629004
OCTOBER 2019

PREFACE

Vedic Mathematics is the name given to a supposedly ancient system of calculation which was "rediscovered" from the Vedas between 1911 and 1918 by Sri Bharati Krishna Tirthaji Maharaj (1884-1960). This is a very intresting topic. This project gives information about the first seven vedic sutras of the Vedic Mathematics. Vedic mathematics is very easy and is important in our day to day life. It makes our calculations easier and faster. It not only helps us to do calculations like addition, subtraction, multiplication and division. But also helps us to solve algebraic problems easier. The main thing is, these ancient sutras are widely used in the designing of the microchips. This project contains five chapters which provides information on Vedic mathematics namely,

1) History of Vedic Mathematics

2) Vedic Sutras

3) Algebraic proof for Sutras

4) Application of Vedic Mathematics

5) Conclusion.

The first chapter deals with the introduction part, history and the development of Vedic mathematics.

The second chapter deals with the meaning, working procedure and proper examples of the Sutras namely Ekadhikena Purvena, Navatashcaramam Dasatah, Urdhwa Tiryagbhyam, Paravartya Yojayat, Shunyam Saamya Samuccaye, (Anurupyena) Shunyamanyat, Sankalana Vyavakalanabhyam.

The third one deals with the algebraic proofs of the sutras which we have discussed in the previous chapter.

The fourth chapter deals with the application and the uses of these vedic sutras.

The final chapter gives the overall conclusion which we have discussed in the previous chapters.

BIOMEDICAL APPLICATIONS OF TRADITIONAL MEDICINAL PLANTS

MARTIAL ARTS AND VARMAM

MANONMANIAM SUNDARANAR UNIVERSITY
Accredited with 'B' Grade by NAAC
ABISHEKAPATTI, TIRUNELVELI – 627 012, TAMILNADU, INDIA
Centre for Research

Dr.K.SENTHAMARAI KANNAN
DIRECTOR

REF:MSU/RES/R1/JULY 2018   Date : 05-July-2018

Ph.D.,Programme Commencement Order

To
SHERLY K
PULIANVILAI,PADANTHALUMODDU
PADANTHALUMOODU POST
Kanniyakumari Tamil Nadu 629163
Mobile No :7530001650 ,Email Id :sherlyk1982@gmail.com

Sir/Madam,

Sub: Registration for doing Ph.D., programme - Date of Commencement of Research work - Intimation-Reg

Ref: Counseling attended by the candidate

* * * * * * * * * * * * * * * *

With reference to the above, you are provisionally registered for Ph.D., Programme as detailed below :

1. Name of the Scholar   : SHERLY K
2. Registration No   : 18211041052013
3. Discipline   : History
4. Gender   : Female
5. Social Category (Community)   : BC
6. Nationality   : INDIAN
7. PWD Status   : Not Applicable
8. Admission Based On   : M.Phil
9. Name of the Supervisor   : DR.K.S. SOUMYA
10. Name of the Co-Supervisor   : NIL
11. Mode   : FULL TIME
12. Research Centre   : HOLY CROSS COLLEGE , NAGERCOIL.
13. Date of Commencement   : 05.07.2018
14. Proposed Title   : ORIGIN GROWTH AND SOCIETAL IMPACT OF KALARIPAYATTU AND THE ART OF VARMAM IN TRAVANCORE
15. Doctoral Committee
    Members Details   : 1. DR B Palammal
                                       ASSISTANT PROFESSOR, DEPARTMENT OF HISTORY, HOLY CROSS COLLEGE, NAGERCOIL - 629004

                                       2. DR. B. SHEEBA KUMARI
                                       ASSISTANT PROFFESOR, DEPARTMENT OF HISTORY, ST HINDU COLLEGE, NAGERCOIL-629004

ASSISTANT   SUPERINTENDENT   ASSISTANT REGISTRAR   DIRECTOR

ISSN 0976-5417   Cross. Res.: Dec.2019   Vol. 10 No.2

Genesis and Growth of Silambam

[1]K. Sherly and [2]K.S. Soumya

[1]Ph.D Research scholar, Department of History, Holy Cross College , Nagercoil. Manonmaniam Sundaranar University, Thirunelveli.

[2]Assitant Professor, Department of History, Holy Cross College Nagercoil.

ABSTRACT

Silambam, is a traditional Dravidian martial art based on stick fighting. This style supposedly originates from the Kurinji hills in present day Tamilnadu 5,000 years ago, where natives used bamboo staves to defend themselves against wild animals. The per sangam literature, states that the Kurinji Hills was one of the five physiographic divisions within Tamilakam, which became known as Keralam after the arrival of Brahmins. The Kuravar of the Kurinji Hills used a staff called Silambam as a weapon to defend themselves against wild animals, and also to display their skill during their religious festivals. The Hindu scholars and yogies who went to the Kurinji mountains to meditate got attracted by the display of this highly skilled spinning Silambam.

Introduction

Silambam is a mainly a form of stick or walking staff fighting. The length of the staff is roughly 1.68 meters (five and a half feet). Size of the staff is related to the height of the silambam player. It should just touch the forehead about three fingers from the head, although different lengths were used in different situations. The 3 feet stick called "sedikutchi" can be carried covertly. Separated practice is needed for staves of different lengths. The usual stance includes holding the staff at one end, right hand close to the back, left hand about 40 centimeters (16 inches) away. This position allows a wide array of stick-and-body movements, including complex attacks and blocks. Unarmed Silambam utilizes several routines based on the movements of animals, primarily snake and eagle forms.

Origin of Silambam

Silambam is an age-old art of patronized by the Chera, Chola and Pandiya kings who ruled Tamilnadu in ancient India. It received Royal Patronage from all kings of Tamilnadu beginning before the Sangam Era (B.C. 2000). The origin and historical development of Silambam may have being with the early Dravidians of ancient Tamilnadu.

Silambam is a weapon – Hasal maritial art of India more specifically in the state of Tamil Nadu where it originated around 1000 BC. The word "Silampam" means either mountain or merely to sound oral folklore traces Silampam back several thousand years to the siddhar (Enlightened age) Agastya while on his way to vellimalar, Agastiya discussed Hindhu philosophy within old man lemet, said old man taught him of Kundalini yoga and nadi (channels) Agastya practiced complied three texts on plam leaves based on the god's teachings. One of these texts was the Kampu sutra (Staff classic) which was said fore cord advanced fighting theories in verse. Those poems and the art

STUDY OF HISTORICAL PLACES IN KANYAKUMARI DISTRICT

MANONMANIAM SUNDARANAR UNIVERSITY
Reaccredited with 'A' Grade by NAAC (3rd Cycle)
CENTRE FOR RESEARCH
ABISHEKAPATTI, TIRUNELVELI – 627 012, TAMILNADU, INDIA
Phone : 0462 - 2333741, 9487907000, Intercom: 2563073, Mail: cfrmsu@msuniv.ac.in, web: msuniv.ac.in

DR. G.BALASUBRAMANIA RAJA
Director

REF : MSU/RES/Admn/July 2023 Session   Date : November 30, 2023

Ph.D., Programme Commencement Order

To
JENIFER J
S-102, ANNA NAGAR, KULASEKHARAM POST
Kanniyakumari, Tamil Nadu, Pincode - 629161
Mobile No. : 7094919353, Email ID : jjenifer12345@gmail.com

Sir/Madam,

Sub: Registration for doing Ph.D., programme - Date of Commencement of Research work - Intimation - reg.

Ref: Counselling attended by the candidate for July 2023 session.

* * * * * * * * * * * * * * *

With reference to the above, you are provisionally registered for Ph.D., Programme as detailed below :

Name of the Scholar	JENIFER J
Registration No.	**2321304108201**
Discipline	History
Inter Disciplinary Detail	–
Gender & Community	Female & BC
Nationality	INDIAN
PWD Status	Not Applicable
Admission Based On	PG
Mode	FULL TIME
Research Centre	Holy Cross College (Autonomous), Nagercoil
Name of the Supervisor with Address	Dr. K. S. Soumya, Assistant Professor Department of History/History and Tourism, Holy Cross College (Autonomous), Nagercoil, 629004 Mobile No. : 9965255724, Email ID : soumya.kholycrossngl.edu.in
Name of the Co-Supervisor with Address	NIL
RAC Members	1. DR S REGI , ASSOCIATE PROFESSOR HISTORY HOLY CROSS COLLEGE (AUTONOMOUS) NAGERCOIL 629004 Mobile No. : 9442481991, Email ID : regisam.emmanuel@gmail.com 2. DR C KALAI ARASU , ASSOCIATE PROFESSOR HISTORY ARINJAR ANNA COLLEGE ARALVAI MOZHI 629301 Mobile No. : 9443390594, Email ID : skarasu93@gmail.com
Proposed Title	AN ENCYCLOPEDIC STUDY OF MARAMALAIS HISTORICAL CONTINUITY AND EVOLUTION
Date of Commencement	30.11.2023 (Fees: Rs. 13000 , Pay ID: 18648761861 , Dt: 30.11.2023)

ASSISTANT   SUPERINTENDENT   ASSISTANT REGISTRAR   DIRECTOR

VISIT TO SOLAR OBSERVATORY CENTRE – KODAIKANAL

Solar Observatory Centre- Kodaikanal
09.03.2024 10:48
10.2197, 77.46715 (±2600m)
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Unnamed Road, Kodaikanal 624103
SW

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6FC8+F8G, Dindigul, Kodaikanal 624101
E

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DEMONSTRATION OF ASTRONOMY

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DEPARTMENT OF BOTANY

HANDS ON TRAINING ON HERBAL FORMULATIONS

FIELD VISIT - TRADITIONAL PLANT COLLECTION

Taxonomy Field Visit Herbarium
Department Of Botany
17.10.2023 10:44
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7CJ8+X89, Chiramadam

DEPARTMENT OF HISTORY

MOU ACTIVITIES WITH GOVERNMENT MUSEUM, TIRUNELVELI

MoU Signing
Government Museum Tirunelveli
06.03.2024 09:52
8.72178, 77.74145
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Tirunelveli 627002

International Conference
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International Conference
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PPCR+RG6, Jansi Rani Nagar, Palayamkottai, Tirunelveli 627002

INTERNSHIP TRAINING PROGRAMME – GOVERNMENT MUSEUM, KANNIYAKUMARI

MEDITATION AND EXERCISE

SKILL BASED COURSE - YOGA PROGRAMME -2019-2020

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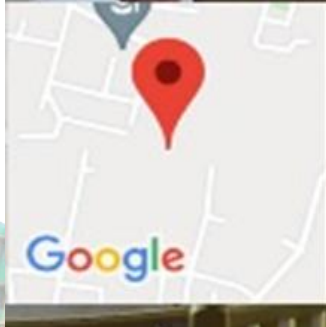Accuracy: 2764.0m
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Note:
Yoga Programme

Time: 01-08-2020 11:10
Note: Yoga Practical

Time: 01-06-2020 12:13
Note: Yoga Practical

SKILL BASED COURSE - YOGA PROGRAMME -2021-2022
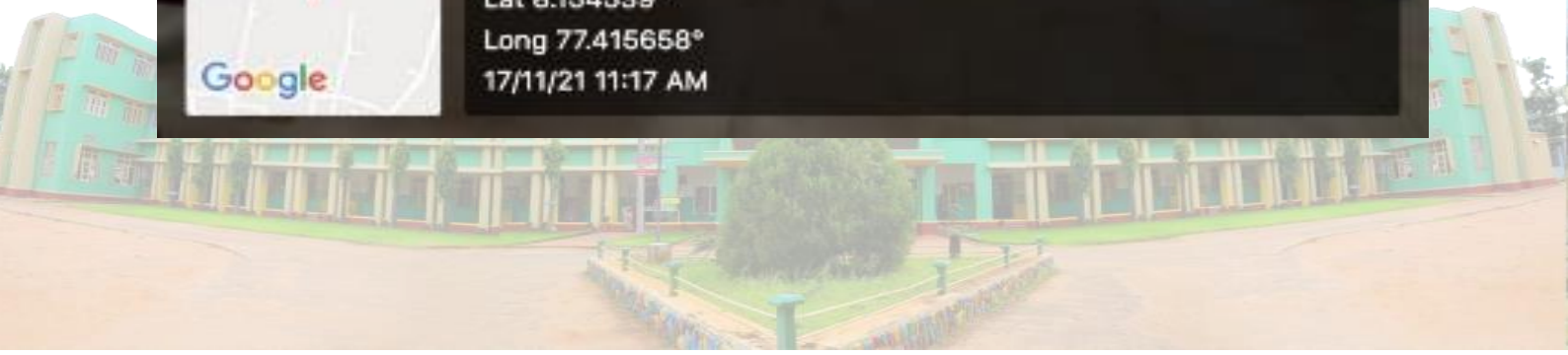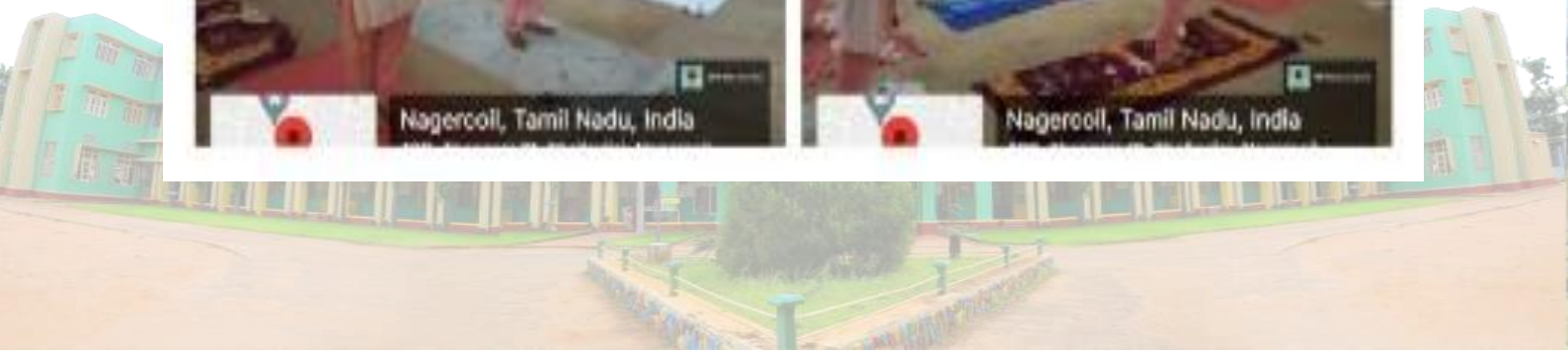

Nagercoil, Tamil Nadu, India
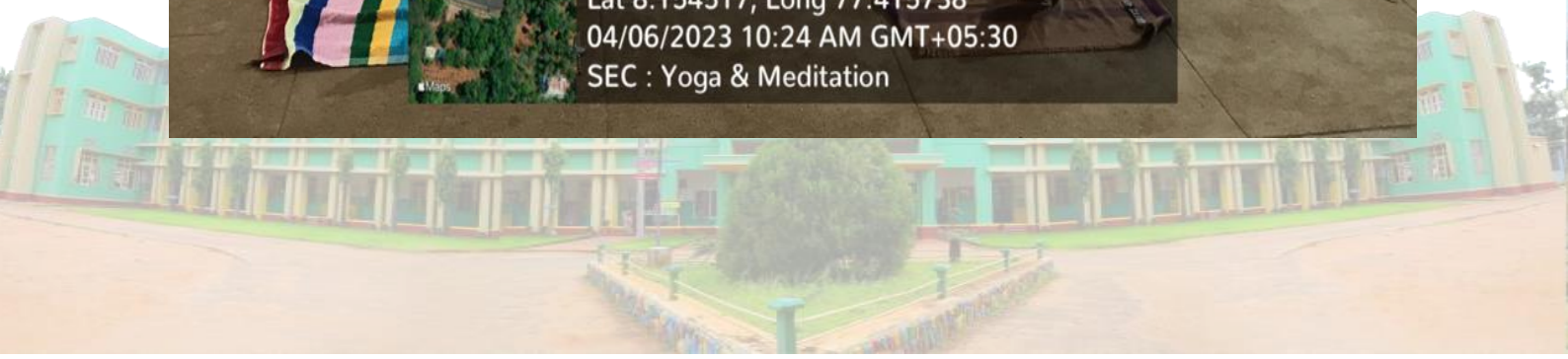42C, Thangam St, Thollavilai, Nagercoil, Tamil Nadu 629002, India
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Long 77.415658°
17/11/21 11:17 AM
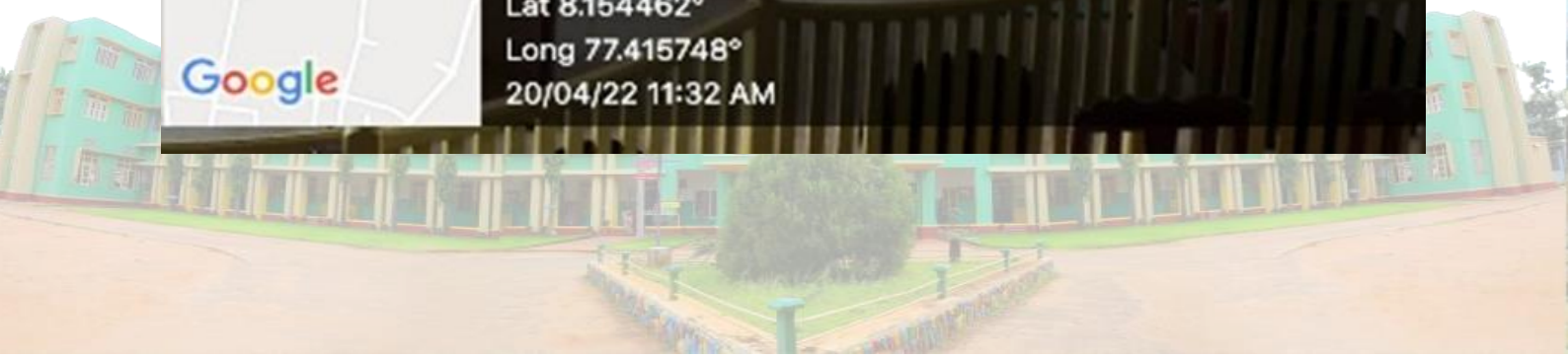
SKILL BASED COURSE - YOGA PROGRAMME -2022-2023

Yoga And Meditation
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5C38+R68, Holy Cross College Rd,
Thollavilai, Nagercoil, Tamil Nadu
629002

Yoga Program
06.04.2023 11:39
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5C38+R68, Holy Cross College Rd, Thollavilai, Nagercoil, Tamil
Nadu 629002