## Women's Christian College, Chennai

An Autonomous Institution affiliated to the University of Madras Re-accredited by NAAC in 2019 with Grade A+ College with Potential for Excellence



## Five-Year and Ten-Year Strategic Plans of the Departments

**Compiled on July 2021** 

#### FIVE YEAR AND TEN YEAR FUTURE PLANS OF DEPARTMENTS

#### **DEPARTMENT OF HISTORY**

#### Five Year Strategic Plan 2021- 2026

- 1 To introduce an M.A Degree programmes in History, Archeology and Anthropology
- 2 Interdisciplinary & Multidisciplinary courses to be introduced.
- 3 Service Learning to be introduced In this connection an MOU to be signed between the

Department of History and Chennai Volunteers to teach students in neighbouring Corporation Schools.

- 4 Publications by faculty a minimum of 2 papers a year in refereed Journals.
- 5 Research projects Compulsory publication by the students & Capacity building programmes to be conducted with funding from ICSSR.
- 6 Rural camps the students to identify and gain insight into the economic issues of rural economy and suggest suitable solutions and to engage in village survey to study its socioeconomic background.
- 7 Adoption of a Village to bring out community development projects therein.
- 8 To start Certificate, Diploma & Degree programme at various exit levels as per the NEP.

#### Ten Year Strategic Plan – 2021 - 2031

- 1 To introduce a Dual degree programme in History & Economics in compliance with the affiliation from the University of Madras.
- 2 Faculty to develop MOOC Courses.
- 3 To start one semester transfer of credits programme among colleges in Chennai if permitted.

\_\_\_\_\_

#### **DEPARTMENT OF ENGLISH (SHIFT 1)**

#### **PROSPECTIVE SHORT-TERM PLAN (5 YEARS) WITH STAFF COMMITTEES**

#### **1.** Projects by faculty

A: United Board Small Grant Projects – 1 every year by a newly recruited/youngest faculty member

B: UGC MRP, ICSSR, TATA, State Council funded projects – 1 every 3 years by midlevel/ senior faculty member

#### 2. Paper publication by faculty/students – CA

2 or more every year, either individually or collaboratively with students

#### 3. Introduction of new UGC courses

1 Value added course every 3 years

1 UGC Certificate course every 2 years

#### 4. Introduction of new papers in emerging areas:

With the aim of ensuring continued academic growth, plans have been made with regard to enriching the syllabus prescribed by the Department. The focus is to include emerging areas of inquiry which are relevant to the Indian context while also keeping in mind the global issues of interest that impact Indian realities.

Papers in emerging areas will be added to the course profile in the coming years. Based on a number of considerations, these papers will tentatively either be a part of a five-year or a tenyear plan. These papers will be included in the existing syllabus or developed as papers by themselves, depending on the scope and vastness of the broader areas. A sketch of a few of the courses is given below.

- a. Literature from Tribal Societies –The collective experiences of tribal communities which are their traditions, culture, history and resistance are expressed through their writing. The oral traditions of these communities which are an integral part of defining identity also form a good part of such literature. This paper will draw attention to voices from within such communities, as opposed to writers from outside offering their voice to these marginalised and long silenced peoples. (This could be offered as a single paper, instead of representational texts just being included in existing papers.)
- b. Media Literacy (including post-truth discourse) Considering the impact of the media in the perception of the world, society and even the self, this paper would be extremely beneficial to the students. Information is a very valuable commodity today and in a post truth era, it becomes essential to scrutinize the functioning of media, media houses and their impact on constructing reality. (This could also be a paper by itself.)
- c. Food and Travel Writing
- d. Illness Narratives
- e. Story Telling for Communication Skills
- f. Content Writing/ Writing for the Internet
- g. Transnationalism A description of this concept/a representative text can be included in 'Postcolonial Literature'.
- h. Literary Trauma Theory Can be included in the list of Critical theories discussed in 'Literary Theory and Research Methodology'. It is of particular significance in the debate regarding the formation of identity.

- i. Statistics for Research Including this module in 'Literary Theory and Research Methodology' will benefit students in acquiring quantitative skills.
- j. 9/11 Literature Representative text/s can be included in 'Contemporary American Literature'.
- k. Computational/Mathematical Linguistics This topic can be included in 'Introduction to Linguistics' as an example of the practical use of Linguistics, and as a prospective career option.

#### 5. Collaborations

International Universities/Colleges linked with WCC for lectures from faculty

#### 6. Seminars, Workshops, Webinars – Individual teachers/course

- 1. Workshops for Theatre, ELT, Creative Writing, Journalism
- 2. Webinar for Translation Studies

#### 7. Research Department

Explore possibility of application for Research Department status at University of Madras

- Registration for Ph.D by faculty memebrs
- Student Innovation, Seminars
  - Innovation
  - Creative Writing Publication
  - Lecture Series
  - Intercollegiate seminars
- a) Ongoing Projects

#### Publication of Creative Writing

The Advanced English students of the 2019 batch are working on a collection of stories to be published this academic year (2021-2022). What began as an attempt at practising the creative writing techniques learnt from the course soon culminated in a publishing effort that now hopes to serve a dual purpose - encouraging high proficiency learners to explore the world of publishing and authorship, and to help produce reading material for learners belonging to different proficiency levels. The stories in the collection bring together different styles and contexts, with the hope that they will captivate the minds of a heterogenous group of individuals while also helping them on in the learning process.

b) Student Innovation

Three students from I BA English (2020 batch) won second place in the Technical category in the Idea Proposal Contest 2021. Aarthi P was the team leader, and Sherlin Kirthana J and Dinah Thomas were part of the team. Their idea was a "Solar Self-Heating Water Bottle". The water bottle would be designed to heat water to render it drinkable, and hence have uses in the fields of sanitation, health and recreation. The project is currently in the research and development stage, and the team is working to finalize the design in order to produce the first prototype. The team is currently investigating the circuit and electrical components required for the device to work, and are also working on how to ensure minimum heat loss is achieved with the water bottle's particular structure and design. The Department plans to encourage the team to execute this innovative idea in 2021.

c) Lecture series & seminars organised by & for students

The Department plans to encourage students to organize a series of lectures/workshops by experts on a specific theme/subject area. Students will be in-charge of all the logistics of such events in consultation with the Head of Department and members of faculty. Such an initiative will train them to organize and manage events as well as to work in teams or to be team leaders.

4.Student research papers and presentations Students will be encouraged to present academic papers at seminars and conferences in college and outside. They will also be given the opportunity to publish their research papers or dissertations in the college journal, Eleanor, with their guides as second authors.

## PROSPECTIVE LONG-TERM PLAN (10 YEARS)

#### **1. Projects by faculty**

A: United Board Small Grant Projects – 1 every year by a newly recruited/youngest faculty member

B: UGC MRP, ICSSR, TATA, State Council funded projects – 1 every 3 years by mid-level/ senior faculty member

#### 2. Paper publication by faculty/students

#### 3. Introduction of new UGC courses

- Value added course every 3 years
- UGC Certificate course every 2 years

#### 4. Introduction of new papers in emerging areas

The following emerging areas of literary interest from across the world will be either crafted as individual courses or may be combined so as to provide students access to these emerging areas

in the best possible manner. Specific titles of papers will be determined at a later date after further discussion.

- **Transnationalism and Migration Literature** Associated with diaspora, globalization, multiculturalism, post-migration studies, this would help in mediating the relationships between national literature and the wider forces of globalizing culture.
- **Protest/ Resistance Literature** During the various forms of colonial/neo-colonial forces that the world has seen and continues to experience, Literature has become a means of resistance used by the oppressed. This area of study helps to communicate and preserve the stories and voices of resistance. This includes literature from America against racial discrimination and the Vietnam War to graphic novels and poetry from Iran, Tibet or Kashmir.
- **Peace Narratives** With the large number of conflict zones in the world today, there are many attempts to use literature and the arts in the work towards peace. The critical strategies for peace literature consider readers to be active agents in the production of meaning (https://www.jstor.org/stable/23607874). Peace narratives could be studied in parallel to resistance/ protest literature.
- Culture Studies, including among other pertinent areas of interest, Disability Narratives.
- Climate Literature- In the recent years, climate change has become a dominant theme in literature. Its frequent representation in fiction has given rise to the term cli-fi, or climate change fiction. This is closely linked with the environmentally oriented branch of literary studies called eco-criticism. (This could be included/ represented in the paper titled 'Ecoliterature'.)
- **Computational/Mathematical Linguistics** This multidisciplinary and very relevant application of linguistics could be offered as a separate paper at an introductory level. As this is a course requiring extensive subject knowledge, faculty with specialised expertise in the field may be considered.

## 5. Linkages with National & International Universities/Colleges

A. National & International Universities/Colleges linked with WCC for lectures from faculty

B. Links established through alumnae working as faculty in International Universities – Roopa Leonard (Oxford University), Shreya Oommen, Sarayu (Arizona State University), Shyamala (British Columbia University)

## 6. Seminars, Workshops, Webinars – Individual teachers/course

- Workshops for Theatre, ELT, Creative Writing, Journalism
- Webinar for Translation Studies

#### 7. Student Seminars

Lecture Series and Seminars

#### 8. Endowment to be instituted by alumnae

#### 9. National/International Conference – Head of the Department

1 Conference every 5 years

## **DEPARTMENT OF UG MATHEMATICS**

## Five year plan

#### 1. Student's Project

To do at least 2 projects in the VI Semester per year by III B.Sc students .

#### 2. Project by Faculty

To submit at least one minor project by faculty in five years

#### **3.** Paper publication by faculty

To publish at least 2 papers in the journals per year

#### 4. New Papers

To introduce Actuarial Maths and Accountancy (as it is useful for job and higher studies)

#### 5. Collaboration with Le Tourneau

To organise special lectures for students

## Ten year plan

## **Project by Faculty**

To submit atleast one major project by faculty in ten years

#### New programmes

1.B.Sc Statistics

2.M.Sc Statistics

3.M.Sc Actuarial Mathematics

## **DEPARTMENT OF UG PHYSICS**

## Five Year plans:

• Enhance overall performance of students in academics, laboratory skills and co-curricular activities and ensure 100% pass percentage by conducting structured remedial classes for slow learners

- Help more students to secure admission for higher studies in renowned national and international institutions by providing additional training in problems solving to face entrance exams.
- Revise curriculum and introduce 'Electronics' paper for II core to enable them perform Electronics experiments in the laboratory
- Organize international and national conferences/ Webinars
- Conduct Workshops / FDPs and arrange special lectures by eminent physicists and scientists from reputed institutions
- Organize a Workshop on 'Equipment and laboratory maintenance' for Physics Lab assistants of Chennai colleges
- Encourage students to do review work and inculcate the habit of presenting and publishing papers
- Guide students to do projects for extra credits, present papers and write research articles
- Faculty to publish papers in Scopus indexed journals and write books/manuals/ chapters in books
- Write Interdisciplinary Project proposals and apply for funded projects
- Apply for Ph.D guideship
- Develop e-content for experiments in physics
- Offer certificate courses (Offline & Online) to enhance the skill and employability
- Modernize/upgrade Physics Laboratory and add more research facilities
- Sign MOUs with reputed institutions and industries for internship opportunities and collaborate with other research organizations for sharing research facilities
- Establish institutional internships and exchange programs
- Offer add-on and certificate courses on Photography and woodworking skills
- Introduce interdisciplinary elective courses and papers on Biological Physics, Geophysics, Astrobiology and Thin Film Solar Cells or Solar Cells
- Extend support for physics learning to school community (Workshop for the teachers and students)

## Ten Year plans:

In 10 years, the Department of Physics looks forward to

- Develop more e-contents for students
- Offer certificate courses (Offline & Online) to women (general public) at a minimal cost through Open Distance Learning or any other mode
- Collaborate with an external social organisation and engage in community outreach
- Network with physics alumnae for Physics Association activities and fund raising.
- Collaborations with foreign universities for staff exchange programs
- Install a Solar Panel to power the entire Science Block

- Organize a 'Summer School in Physics' at WCC for B.Sc Physics students of colleges all over India in collaboration with reputed institutions, every year.
- Implement the 3D printers, laser cutters and a high definition visualization lab with good acoustics for in-house usage
- Furbish a well equipped department Library/Reading room with adequate collection of Physics books, study oriented journals and access to modern tools of learning such as computers with internet facility, simulation software, e journals etc
- Establish a research centre /Centre for Nanotechnology

#### **DEPARTMENT OF CHEMISTRY**

\_\_\_\_\_

#### Ten Year Plan

#### **Curricular aspects**

- We wish to envisage the department in the next ten years as leader in providing education on par with first-class institutions at the national and International level.
- We focus on linking education to emerging career patterns- Job oriented courses.
- More practical oriented classes with field work.
- Open Book tests and exams
- Experiential Learning- Real time problems exposure and experience.
- Service Learning
- Active Engagement of Chemistry Club
- To give that edge to a student of WCC we plan to introduce Courses focusing on employability, entrepreneurship and skill development

#### Plan period 2021-26

- Syllabus revision 2022
- A thorough revision of Chemistry syllabus as demanded by the post graduate degree programs in the country and abroad and also aims at enabling the students to tackle competitive examinations once they earned a degree.

#### Courses focusing on employability/ entrepreneurship/ skill development

- Cheminformatics
- Biophysical chemistry
- Molecular modelling dynamic simulations
- Clinical Biochemistry –
- Supramolecular chemistry
- Chemical Biology

• Drug design: Chemistry, Theoretical modelling and SAR

#### Value-added certificate courses offered

- Chemistry of Art/Chemistry and Art
- Essentials of Green chemistry
- Dyes and polymers
- Astrochemistry

#### 2026-31

#### Courses focusing on employability/ entrepreneurship/ skill development

- Medicinal Chemistry
- Computational Chemistry
- Energy and storage devices
- Chemistry of Materials
- Environmental Chemistry; Environmental toxicology;

#### Value-added certificate courses offered

- Chemistry of the Environment
- Separation Techniques

#### Support applied learning and complements other related fields.

- Efficient grading using rubrics and Honour code.
- Using more of digital tools and media.
- Should teach students to master one or more skills in the related field.
- Design courses and programs to meet employer needs.
- Merge online and face-to-face learning.
- Hybrid learning should be encouraged.

#### **Teaching** –learning

Innovative teaching methodologies used

- Blended mode; Learning beyond classroom; online teaching learning tools; Project-based learning & problem-based learning
- Peer group learning
- Peer assessment of faculty

#### Faculty activities

E-Content development (5 years)

• Per faculty – 10 videos

#### Fund raising through External Consultancy and Resource Services offered

- Water and soil testing exploring viability and link with water TWAD board- LP, LG
- FDP for School teachers (Chemistry -PGT) 1 per year
- Workshop on batik, tie and dye, block and screen printing techniques 1 per year
- Chemistry Coaching for competitive exams such as JAM, NEET, JEE. -BM,MJ

#### **Research Promotion**

Research publications in the refereed Journals (2 publication per year) Research Projects undertaken (government and non-government) Patents published/awarded during the year

#### **Department Activities**

Programs organized by the Department Workshop on Cyclic Voltammetry Seminar, Conferences – National and International level

## DEPARTMENT OF PLANT BIOLOGY AND PLANT BIOTECHNOLOGY

\_\_\_\_\_

#### **FUTURE PLANS**

#### > Projects Proposal:

#### Minor Research

2021-2022:

- Tamil Nadu State Council for Science and Technology for minor projects
- College Seed grant
- Forest Department

2022-2023:

- UGC Minor research proposals /Tamil Nadu State Council for Science and Technology for minor projects
- College Seed grant

2023-2024:

- Tamil Nadu State Council for Science and Technology for minor projects 2024–2025:
  - College Seed grant

#### Major Research

UGC, MoEF, DBT, DST, etc. (Would apply when the portal opens for relevant subject expertise)

#### **Student Research project**

- 2022 -2023 (2 students)
- 2023-2024 (2 students)
- 2024-2025 (2 students)
- 2025-2026 (2 students)
- Paper Publication: 12 Nos (Next five years)
- > Paper Presentation: 12 Nos (Next five years)

#### Introduction of new courses:

- M.Sc Botany
- M.Sc Life Sciences (2026 onwards)

This program will strengthen and enhance student's understanding and knowledge in multiple avenues of biology and acts as a launch pad for careers in diverse fields, ranging from purely academic endeavor such as research and teaching to entrepreneurship, science writing etc.

Curriculum for Double major

#### > New papers planned to introduce in emerging areas:

2023 - 2024

- Core Reproductive Biology of Angiosperms & Pollination Biology
- Supporting (Zoology) Plants and People
- Core Bioanalytical tools & Bioinformatics
- Core Entrepreneurial Botany
- Core Research Methodology & Biostatistics
- II Supporting Phytochemistry
- Core -Ethno botany

#### 2024 - 2025

- NME Herbal Science
- NME Microbial Food processing and preservation
- Certificate course to be offered: (One of these courses will be offered every year) Herbal dyes/ Herbal Beauty Care/Solid waste management/Naturopathy and Traditional Health Care
- > National/International Seminar, Conference, Workshop:

#### National Level:

- Remote Sensing Its application in vegetation mapping (2021–2022)
- Webinar on Role of anatomical structures in identification of plant species Plant Anatomy (2021–2022)
- Webinar on Epigenetics (2021–2022)
- Workshop on Bonsai / Terrarium making (2022–2023)
- Training on Basics of Plant Identification and Botanical Nomenclature (2022-2023/2023-24)
- Lecture workshop on Phyloinformatics (2022–2023/2023–24)
- Workshop on computer aided Landscape Architecture (2023–2024)
- Webinar on Metabarcodes and Minibarcodes (2023–2024)

**College Level** (Would be conducted when the relevant course is offered)

- Workshop on *Spirulina* cultivation
- Demonstration in preparation of probiotic beverages
- Workshop on Food adulteration / Water testing (Development of Kits for Food microbiology for school students Star College funding)
- Identification of Microfungi
- Preparation of Dairy products/Probiotics
- Preparation of herbal products
- Workshop on the synthesis and identification of nanoparticles
- Workshop on Food Preservation techniques
- Workshop on Ikebana/Terrarium Technique
- Workshop on App development

#### Training program proposed by the department

- Training program for Biology Laboratory Assistants
- Workshop on Hydroponics other college/school students
- > MoUs, Linkages and Collaborative Activities (Proposed)
  - Bionyme Laboratories, Chrompet (Summer training/internship & Research)
  - PARIKSHAN LAB Food Testing Laboratory, Guindy
  - Marina Lab
  - Sun Agro Pvt. Ltd.
  - Eco-Society Chennai (Environment and community based activities)
  - Tropical Botanical Garden and Research Institute, Palode, Thiruvananthapuram
  - Centre for Advanced Studies in Botany, University of Madras
  - PG and Research Department of Botany, Madras Christian College, Tambaram

• SRM Institute of Science and Technology (Laboratory visit)

### > Online Course:

- Environmental Biotechnology
- Solid Waste Management
- > Augmentation of Department with New Facilities/Activities:
  - Student Research Cell: An initiative to encourage research culture among students

Objectives:

- To enhance the research capacity of students
- To encourage students to publish original research work in leading journals and presenting at conferences.

A faculty coordinator will be in-charge for the Research cell. The duties include the following:

- To plan, monitor and document the activities of the Research Cell
- To organize Academic Writing workshops in order to hone writing and analytical skills of students.

Every year a minimum of two student presentation/publications shall be mandated.

**Construction** Department Magazine: To be released annually

Faculty coordinator for COSMOS club will be in-charge

- Instagram Page for the Department: Student team with a faculty advisor (from 2021 onwards)
- Digital Documentation of the department Museum specimens and Herbarium: (by 2025)
- **Establishment of a Nursery for plant propagation**: by 2023
- ✤ Improvise Botany Garden by 2023
- Alumnae Association: To strengthen Alumnae association and organise a meet at least once in three years
- Fund Generation:
  - Harvest from mushroom house
  - Harvest from hydroponics
  - Vegetable garden
  - Sales of probiotics
  - Department nursery
- \* Virtual tour of all Gardens, Herbarium and Museum on campus

## TIME LINE

Criterion	2021-2022	2022-2023	2023-2024	2024-2025	2025-2026
Research Projects					
Minor	<ul> <li>TNSCST</li> <li>College Seed grant</li> <li>Forest Departm ent</li> </ul>	<ul> <li>UGC Minor/</li> <li>TNSCST</li> <li>College Seed Grant</li> <li>Student Research Project</li> </ul>	<ul> <li>TNSCST</li> <li>Student Research Project</li> </ul>	<ul> <li>TNSCST</li> <li>College</li> <li>Seed Grant</li> <li>Student</li> <li>Research</li> <li>Project</li> </ul>	<ul> <li>TNSCST</li> <li>College Seed Grant</li> <li>Student Research Project</li> </ul>
Major				UGC, MoEF, DBT, DST	
Paper Publication	2	2	3	3	2
Paper Presentation	-	2	4	3	2
New PG Program					M.Sc Botany/M.Sc. Life Sciences
New Courses			Core - Reproductive Biology of Angiosperms CE-Pollination Biology Supporting (Zoology) - Plants and People Core- Bioanalytical tools & Bioinformatics Core - Entrepreneurial Botany Core -Research Methodology & Biostatistics II Supp - Phytochemistry Core-Ethnobotany	NME - Herbal Science	

Certificate	Herbal Dyes/He	rbal Beauty Care	/Naturopathy a	nd Traditional He	ealth Care/Solid
Course	Herbal Dyes/Herbal Beauty Care/Naturopathy and Traditional Health Care/Solid waste management				
National:	Workshop :	Training on	Workshop	Webinar on	National/Interna
Seminar/	() officially .	Basics in	on computer	Metabarcodes	tional
Conference/	Remote	Plant	aided	and	Conference
Workshop/	Sensing – Its	Identification	Landscape	Minibarcodes	conterence
Webinar	application in	and Botanical	Architecture	winnoarcodes	
vv edillal	vegetation	Nomenclature	Architecture		
	mapping	Nomenciature			
	mapping	National level			
	Webinar on	conference	Workshop		
	Role of		on		
	anatomical		Phyloinform		
	structures in		atics		
	identification				
	of plant				
	species				
	species				
	Webinar on				
	Epigenetics				
Mous/Linka		me Laboratories.	Chrompet (Sur	nmer training/int	ernship &
ges/Collabor	Resear		e		• montp ••
ations	<ul> <li>PARIKSHAN LAB – Food Testing Laboratory, Guindy</li> </ul>				
	<ul> <li>Marina Lab</li> </ul>				
	<ul> <li>Sun Agro Pvt. Ltd.</li> <li>Eas Society Channel (Environment and community based activities)</li> </ul>				
	<ul> <li>Eco-Society Chennai (Environment and community based activities)</li> <li>Tropical Botanical Garden and Research Institute, Palode, Thiruvananthapuram</li> <li>Centre for Advanced Studies in Botany, University of Madras</li> <li>PG and Research Department of Botany, Madras Christian College,</li> </ul>				
		1	rtment of Botar	iy, Madras Christ	ian College,
	Tamba				
				ogy (Laboratory	visit)
	Letourneau and Liverpool Hope Universities				
Activities/Fa	Research Cell for students				
cilities To	• Department Magazine: To be released anually				
Be Added	• Instagram Page for the Department: Student team with a faculty advisor				
		n 2021 onwards)	on of the der	ortmont Museur	n specimens and
	-	arium: (by 2025)	-	artificiit îviuscui	ii specificits and
		· •		propagation: by	2023
		ovise Botany Ga		r-op-Batton, of	
	-	p a basic plant P	•		
			10		
Fund	Through the sale	2 01			

Harvest from mushroom house	
Harvest from hydroponics unit	
Organic vegetables	
Probiotics	
• Plants from the proposed nursery	

## DEPARTMEN T OF ADVANCED ZOOLOGY AND BIOTECHNOLOGY

#### FIVE YEAR PLAN

#### YEAR I 2021-22

#### **Projects:**

 Impact of Virtual Learning on Academic Community in Tamil Nadu during COVID Pandemic Dr. V. Judia Harriet Sumathy (submission of proposal) UGC (Minor) – 2 Lakhs, ICMR – 1 Lakh, DBT – 1 Lakh, TNSCST – 50,000, TANCHE – 50,000 Total Rs 5 Lakhs

#### **Paper publications:**

> Ovicidal, Larvicidal and Pupicidal activity of *Nelumbo nucifera* Gaertn (Nymphaeaceae) against the filarial vector *Culex quinquefasciatus* Say (Diptera: Culicidae)

- **Dr. Annie Rubens**<sup>1</sup> and Dr. P. Philip Samuel <sup>2</sup>UGC Care- listed Journal-ENTOMON
- Adapting UI technique as a tool for teaching and learning faunal taxonomy (tentative title to be published in 2021-2022) Dr. Benitha Golda
- Isolation of *Bacillus thuringiensis* from soil and their impact on mosquito larvae, Journal of Sustainability, Agri, Food and Environmental Research Ms. Jenila J.S & Dr. V. Judia Harriet Sumathy
- Isolation and characterization of *Actinomycetes* from soil samples and screening their antibacterial activity, Journal of Sustainability, Agri, Food and Environmental Research Ms. Savitha R & Dr. V. Judia Harriet Sumathy.

#### New courses/ Modifications in existing courses

1. Introduction of New Paper Wildlife Biology as CE in VI Semester

#### Liverpool Hope Lectures: 1 lecture

School of Health Sciences

Certificate Course: Vermicomposting/ Aquascaping and Medical Coding

Plan by September 2021 - Odd semester 2022, Budget, Fees feasibility

Rachel Philip WORKSHOP: Use of online statistical tool / Bioinformatics, July 2021

**BioImage Club activities:** 

- 1. Moth week July 2021 (Invited talk, Day mothing, Night mothing)
- 2. Great Backyard Bird Count Jan/ Feb 2022

## YEAR II 2022-23 (Centenary year of the Department)

# International Conference in Wildlife Conservation (2 Days July 2022) (ONLINE MODE)

## **Projects:**

1. Establishment of Institution Healing Garden with Digitized Documentation as a Means of Native Medicinal Plants Conservation- Already applied to the State Forest Research Institute, funded by the State Forest Department, TamilNadu. (To be sanctioned in 2022-23) **Dr Benitha Golda** 

2. Effect of oil contamination on foraminifera near Chennai harbour Dr Jancy Merlin

Duration: One year Funding Agency: GEMS Tamil Nadu (Geological, Environmental, Mining Solutions, Tamil Nadu) Total Amount: 20,000/-

## Paper publications:

- 1 Effect of Glycogen Synthase Kinase 3 beta on the apoptosis or survival pathway of MCF-7 Breast cancer cell line. **Dr Jancy Merlin** Molecular Biology Reports/Journal of cell and molecular biology
- 2 Isolation of biosurfactant from yeasts, bacteria, fungi and its application in cosmetic formulation of toothpaste Reshma Elsa Lookose and **Dr. V. Judia Harriet Sumathy**, Journal of Environmental and Experimental Biology.
- 3 Production of Biopaint using natural ingredients, S. Silvya Josephine & Dr. V. Judia Harriet Sumathy Journal of Environmental and Experimental Biology.
- 4 Molecular phylogeography in Pyrrhocoridae A review **Dr Evangelin G**
- 5 Phylogeny and Biogeography of Indian Reduviidan Entities Dr Evangelin G
- 6 Isolation, Characterization of hemocyanin from the serum of mole crab *Emerita emeritus*.
   Dr Christina Y
- 7 Serum Phenoloxidase activity in the mole crab *Emerita emeritus*. Dr Christina Y

New courses/ Modifications in existing courses:

1 **Biology of Animals Practical** – Foraminiferan study (DBT/ VTC)

**Liverpool Hope Lectures: 1 lecture** 

## **School of Health Sciences**

Certificate Course: Certificate course on Medical Transcription

#### To be launched in the Odd semester

- RP WORKSHOP: Museology- Workshop on Museum Preservation (managing museums?) September 2022
- Collection, Identification and Mounting of Foraminifera September 2022
- FDP Department of Zoology & IQAC ,WCC (August 2022)
   Preparation and submission of research proposals to various funding agencies

BioImage Club activities: Plan an activity every month

(Staff - History of the department, infrastructure)

#### **YEAR III 2023-24**

#### **Projects:**

1. Digital documentation and publication of an identification manual of the Molluscans in the museum – TANSCHE **Dr Benitha Golda** 

#### **Paper publications:**

1. Charecterization of Ecdysteroid Receptor in Penaeus monodon (2023-2024)

Invertebrate Reproduction and Development/Current Science. Dr Jancy Merlin

2. Removal of dye from textile wastewater using Zero Valent Iron Nanoparticle, Ms. Sangeetha & **Dr. V. Judia Harriet Sumathy**, Journal of Water and Environmental Nanotechnology.

3. Remediation of wastewater using Graphene Oxide Nanoparticle Ms. Jose Begasia J & **Dr. V. Judia Harriet Sumathy**, Journal of Sustainability, Agri, Food and Environmental Research Ms. Savitha R & Dr. V. Judia Harriet Sumathy.

4. Diversity and Distribution of Reduviidan Fauna in theNanmangalam Reserve Forest **Dr Evangelin** 

5. Behavioural Studies in Chosen Reduviids Dr Evangelin

#### New courses/ Modifications in existing courses:

Introduction to Proteomics and genomics (2023-2024) in the IT tools and Bioinformatics paper (**Dr Benitha**)

#### **R DNA technology & Culture Techniques (DBT STAR?)**

Immunology – Cytokines / Transplantation Immunology

Certificate Course: Vermicomposting/ Aquascaping/ Medical Coding / Bioinformatics

#### (any one) in the Odd semester

#### **RP Workshop:**

• **DNA Profiling (Using PCR from DBT STAR?)** / **Cell Culture** Hands on training in lab equipments: (Preparing solutions, handling of lab equipments)

## YEAR IV 2024-25

#### **Projects:**

## Impact of potential endocrine disruptors on human health – An Awareness Program Dr Jancy Merlin

Project Proposal Writing (2023 - 2024) Implementation of the Project (**2024-2026**) Duration: Two years Funding Agency: UGC Minor Research Project Total Amount: Rs.1,18,000/-**Paper publications: Entomology/ Aquatic Entomology** Prey Sensitization, Learning and Memory in Reduviids: Implications in Biological Control **Dr Evangelin G New courses/ Modifications in existing courses:** Genetics – Gene rearrangements in Antibody heavy chain & Light chain genes **Liverpool Hope Lectures: Certificate Course:** Vermicomposting/ Aquascaping/ Medical Coding / Bioinformatics (any one) in the Odd semester **RP Workshop:** Fish cell culture Techniques

#### YEAR V 2025-26

New courses/ Modifications in existing courses: DNA Bar coding Liverpool Hope Lectures: Certificate Course: Vermicomposting/ Aquascaping/ Medical Coding / Bioinformatics (any one) in the Odd semester

#### **10 YEAR PLAN**

#### **Consultancy: Based on Certificate courses offered**

#### **Certificate Courses – Interdisciplinary**

- Introduction to Aquaponics
- Nutraceuticals- with the Plant Biology and Biotechnology; Nutrition & Dietetics and Chemistry department

#### **Certificate Courses**

• Introduction to Ornithology (2026-2027) with English Department

• Microtechnique (2028-2029 year plan)

## Projects (10 year plan) Dr Evangelin G

- > Insect diversity through the seasons at the Women's Christian College Campus
- > Molecular phylogeny in Pyrrhocoridae in South India
- > Histopathology studies on the effect on radiation on the eggs of *Iphitalimbata*
- Molecular Phylogenetic analysis, bioefficacy and population dynamics of certain reduviid species in Tamil Nadu, South India.
- Survey and Documentation of Moths on campus using DNA BARCODING UGC Minor research (2026-2027 year plan) Dr Benitha Golda

## **DEPARTMENT OF HOME SCIENCE**

S.No.	Торіс	5 Year Plans	10 Year Plans
1.	Teaching	Develop e-content for at least 10 courses	At least one e-content for every
		(Human Nutrition, Physiology, Food	course
		Science, FSM, Nutritional biochemistry,	
		Human Growth & Management and	
		Textiles	
		Offer at least one online course-Swayam	Offer at least 5 online course-
			Swayam
2.	Research	Research collaboration with other	Research Collaborations-2
		academic/research Institutes-atleast 1	
		Apply for seed grant for research	Apply for seed grant for
			research
		Increase faculty with Ph.D Guideship	Increase faculty with Ph.D
			Guideship
		Major Research project-1	Major research -1
		Minor research projects-2-3	Minor Research Projects-2-3
3.	Curriculum	Revise UG and PG courses-update syllabi	Revise UG and PG curriculum
			based on recent developments
			and requirements as well as
			needs of students and
			employers
		Introduce new courses like:	
		(at least 3-4)	
		1. Advances in food processing and	
		packaging technologies	
		2. Food fortification and fermentation	

		3. Nutritional Epidemiology,	
		4. Immunonutrition	
		5. Nutrition in critical care (parenteral	
		and enteral nutrition)	
		6. Global Health and Nutrition	
		7. Learner designed and service-learning	
		courses	
		Integrate Service Learning as a	
		component in Food	
		preservation practicals	
		Introduce internships to enhance	
		employability skills:	Enhance employability and
		Internship in printing & Dyeing	skill training through
		Internship in tailoring	meaningful internship
		Internship with Modern foods	programs at UG and PG level
		Internship with Aavin	
		Internship with food, hospitality industry	
		Internship with fitness centres	
		Certificate Courses- at least 1-2	Certificate courses- at least 2-3
		Under following areas	
		1. Sports Nutrition, physical fitness and	
		weight management	
		2. Vegan diet	
		3. Fermented foods and their health	
		benefits	
		4. Baking	
		5. Fruit and vegetable preservation	
		6. Textiles and Fashion Designing	
4			
4.	Collaborations	Reading University, UK	Research Collaboration
		Liverpool Hope, UK	
		Collaborations for certificate programs	Collaborations for certificate
			programs
		Collaborations for Internships	Collaborations for Internships
_		MOU-at least 5	MOU-5
5.	Conferences	National Conference – at least 3-4 in five	National Conference- at least
		years	4-5 in five years
		1.National conference on Sports Nutrition	
		International conference -1-2	International Conference-1-2
		1. Nutrigenomics: from molecular	1. Nutraceuticals and
-		nutrition to prevention of disease'	Functional foods'
4	Workshons		FDP /summer workshop in
6	Workshops, Webinars		Home Science

		Workshops on relevant topics - at least	Need based workshops and
		5-8 in five years	webinars-at least 2-3/year
		1. Management	weomars-at least 2-5/ year
		<ol> <li>Wanagement</li> <li>Leadership skills</li> </ol>	
		<ol> <li>2. Leadership skins</li> <li>3. Entrepreneurship</li> </ol>	
		<ol> <li>4. Research Methodology</li> </ol>	
		<ol> <li>Kesearch Methodology</li> <li>Current trends in Dietetics</li> </ol>	
		6. Food Safety	
		5	
		<ol> <li>Textiles and Fashion Designing</li> <li>Nutrition Assessment skills</li> </ol>	
		9. Lifesaving skills	
		CNCREA- Webinars	CNCREA-Webinars
		Awareness program-Healthy diet and	Awareness program-Healthy
		lifestyle-1-2 per year	diet and lifestyle-1-2 per year
6.	Outreach &	Program on parenting and nutrition for	
	Community	parents of Nursery school	
	Development	Outreach program-CNCREA-2 per year	Outreach programs-CNCREA-
			2 per year
7.	Publications	Research paper publications-at least 6-	Book publication-at least 1-2
		12/year and 30- 36 in 5years	(Biochemistry)
		Chapter in book- at least 1	Chapter in Book- at least 1
		Textbook revision	Manual on Food preservation
			and basic culinary tips
			Develop a simple software for
			students on statistical analysis
			frequently used by them in
0			research.
8.	Resource	Sell preserved products as part of the	Raise funds through green box
	Mobilisation	Green Box initiative	sales, food sales and entrepreneurial initiatives of
			students
		Mobilize resources through alumnae	Mobilize resources through
		network and NSC	alumnae network and NSC
9.	Infrastructure	Set up herb and vegetable garden	1.Set up natural dyes/printing
9.	Infrastructure	Set up herb and vegetable garden	1.Set up natural dyes/printing and Dyeing lab

## **DEPARTMENT OF COMPUTER SCIENCE – SHIFT I**

	5-Year Plan	10 - Year Plan
Curriculum – New Programs / Certificate / PG Diploma	• Offer Certificate courses in Online / offline / blended modein addition to regular courses from semesters 2 to 6 to specialize in Data Science / Artificial Intelligence / Web Technologies / Multimedia / SoftwareEngineering / Cyber Security / Networks	• Offer Online Degree programs in B.Sc. in Artificial Intelligence / B.Sc. in Cyber Security
	• Offer one year PG Diploma Courses in Artificial Intelligence /Cyber Security	• Offer Inter- disciplinary Online Distance Learn ing PG Diploma programs in Computational Science / Computational Biology etc.
		• Earn credits from Indian / Foreign universities
New Courses	• Mobile Application Development	• Quantum Computing
	• Social Network Analysis	• Edge Computing
	• Under-graduate Research	Game Development
Teaching, Learning	• Develop E-content forcourses in Bi-Lingual mode	Entire Degree program will have e-content
	• Offer online Lecture Series by Professorsfrom LeTorneau on new topics	
Research	Project:	• Build a
	<ul> <li>Build a multi-lingual chatbot</li> <li>Build a mobile app to encourage and promote entrepreneurship among</li> </ul>	<ul> <li>Geographical Lens of our college</li> <li>Develop a Computer Science</li> </ul>
	students	Computer Science Research Centre

	• Build an app to provide restricted access to	that promotes
	laboratoriesor buildings through RFID enabled studentID cards	inter-disciplinary research
	• Build a mobile app to maintain the assets of the Department and	
Research Fund Mobilization	College Apply to College / Government / Non- Government Agencies for Research Grant	Apply to Non- Government/ International agencies / for Research Grant
Publications	• To publish papers containing the outcome f the staff / student projects	Publish a High Quality Research Journal
	• Faculty to publish chapters in book, writing a book	
Collaboration	Create Linkages / MOU with National / International Universities and Colleges to enable knowledge sharing among teachers and students	Associate with National / International Research organizations to promote research culture in the department
Workshops /Conferences	Conduct Online workshop series / conference in collaboration with Premier Institutions inIndia	Conduct Online workshop series / conference in collaboration with International Universities such as LeTorneau University,USA, Liverpool Hope University UK
Consultancy	Provide Consultancy to Government Schools and Colleges	Provide Consultancyto start-up software companies
Foreign Collaboration	Student exchange program with LeTorneau University USA / Liverpool Hope University UK	Staff exchange program with LeTorneau UniversityUSA / Liverpool Hope University UK

Infrastructure	Setting up a	-
	IOT Lab, Mobile Devices	
	Lab, Cyber security Lab	

### **DEPARTMENT OF PSYCHOLOGY**

Based on an Online meeting held on 7<sup>th</sup> June 2021,convened by Dr.M.Kanchana ,HOD, Psychology Dept, (Shift I), the following proposal is being submitted .The following members were present at the meeting. Dr.D.Sumathi, Dr.Usha Rani, Ms.Nazneen, Ms. Sruti Lall, Ms. Jemmy.S.,Ms. Jelin,Ms. Rini and Ms. Anuradha

#### **Detail of projects**

• Dr. Usha Rani will be submitting a proposal to BPR&D / UGC

Topic: Training women to enhance emotional stability and self-esteem for prevention of dating violence

Principal Investigator: Dr Usha Rani

• Information with regard to TANSCT, ICSSR, UGC and certain other funding sources were shared. Staff were encouraged to apply for certain projects as part of the 5 year plan.

#### Paper publications by students and faculty

- PG students doing their dissertations to be encouraged to present/publish papers by their respective guides
- With regard to M.Phil students, CIA weightage of 25 marks is given for getting a research paper ready for publication based on their dissertation, before their thesis viva. The same can be published soon after their viva.(introduced from 2020 batch onwards)
- Currently the Dept. (Dr.Kanchana, a research scholar and one 2<sup>nd</sup> PG student) is jointly working on a cross cultural research with a Professor from London South Bank University. There will be 2-3 publications from this collaborative research.

#### Introduction of new UGC Courses

#### Introduction of Certificate courses

- Based on tie up with TTK hospital. Adyar, a certificate course on addiction counselling will be explored.
- Based on tie up with SCARF certificate course in Psychosocial rehabilitation/ mental health counselling/Youth mental health and life skills will be explored.

- A course on career counselling in collaboration with Promise Foundation, Bangalore can be explored.
- The feasibility of such courses being offered as UGC Certificate courses would be looked into.

#### New papers to be introduced in the emerging areas.

• Introduction of the following papers will be looked into- i) Cognitive Psychology 2) Indian Psychology and 3) Military Psychology The first two papers will be generally very useful for those studying for competitive exams such as UGC NET and Civil services.

#### Collaborations

• Possibility of introducing **Online International learning** with Psychology students at London South Bank University and WCC Psychology students will be worked out after discussion with the Principal.

If the trial run proves successful the same can be implemented with about 10 student pairs from 2022-2023. Working online on a joint presentation over a 4 month period. i.e. one semester.. (a pair would mean one student from WCC and one from LSBU) For more details please refer attachments.

• Future collaboration opportunities could also be explored with LSBU.

### Other activities proposed

- To commence a Psychology club
- To commence a research journal by the Department with ISBN.

#### **Reg.** Golden jubilee year celebrations (2022-2023)

- As the Department is approaching it's Golden jubilee in 2023.the year 2022-2023 could be celebrated as Golden Jubilee year.
- Some of the initiatives mentioned above could be introduced during the Golden Jubilee year.
- Also it is proposed to hold an International Conference to mark the occasion (if it is viable)
- Capacity building program (15 days) in research methodology will be explored with UGC funding.

## **DEPARTMENT OF COMMERCE – B.Com**

### **5-YEAR DEPARTMENT PLANS**

- Restructuring the existing Academic Syllabi to include emerging trends in the respective courses and introduce new courses on latest developments
- Paper publications in peer reviewed journals/conferences by faculty and students
- Organising Webinars and Workshops
- Introduce job oriented/skill based add-on Certificate courses.
- Utilise various Technology based education platforms for improving teaching, learning and evaluation processes
- Creation of Helpline for resolving student grievances
- Collaborating with NGOs and organize socially responsible / environment awareness activities.
- To start a newsletter

#### **10-YEAR DEPARTMENT PLANS**

- Faculty to apply for guideship
- Apply for Research projects
- Organise Conference
- Convert a potential 15 credit research project on entrepreneurship into a start-up
- Faculty to write and publish books.

[DEPARTMENT OF COMMERCE – GENERAL

\_\_\_\_\_

#### Academic Year 2021-22

#### Academics

- Curriculum of compulsory Internship Program will be amended for taking up internship with local industry, businesses, artists, crafts persons etc., as well as research internships with faculty and students at their own or research institutions so that it may improve their employability.
- Learner Designed Course (LDS) offered to the 21 batch students

#### **Staff Plan and Activity**

- FDP on "E-Content Development and its Tools"
- Each staff will do atleast one Research Paper Publication in UGC Care Listed Journal in a year.

#### **Department Plans (Activities, Events/Programs)**

- Online National Quiz on "Intellectual Property Rights (IPR)"
- Magazine (Odd Semester)
- Webinar on "TNPSC Group I Exam and UPSC Civil Service Exam To motivate students to prepare for Government Exams" along with Shankar IAS Academy
- Department plans to initiate "Lending Library" to lend books to students in need of books for that semester and return it, to be used for the next batch of students.
- Newsletter (Even Semester)

## **Collaboration (MoU)**

• MoU to be renewed with TATTI

### Students Well-Being, Activities and Events/Programs

- Department Orientation Program for first years and Farewell for final years.
- Students will be indulged in CSR activities.
- Online Workshop on SPSS will be conducted for project students.
- Remedial classes for average and below average students will be conducted.
- Students will be encouraged to enroll with at least one MOOC (Massive Open Online Courses) / NPTEL courses per academic year.
- Bridge Course for 2 to 3 hours for the first years in their initial days to now the basics of Accounts and Business Studies

### **BRIDGE COURSE**

A bridge course for newly admitted students is conducted before the commencement of the first semester classes. The main objective of the course is to bridge the gap between subjects studied at Pre-university level and subjects they would be studying in Graduation. The syllabus for the course is framed in such a way that they get basic knowledge on the subjects which they would be learning through graduation.

S.No.	SUBJECTS	No. of Hours
1	Basic Accounts	2 hrs
2	Business Studies	2 hrs
3	Communication Skills	2 hrs

#### Academic Year 2022-23

#### Academics

• Skill Based Courses such as Business Analytics, Cyber Security, Artificial Intelligence and Digital Marketing can be introduced.

#### **Staff Activities**

- Faculty Development Program (FDP) on "National Education Policy (NEP) 2020" can be conducted
- Each staff will do at least one Research Paper Publication in UGC Care Listed Journal in a year.

#### **Department Events/Programs**

• One Day Entrepreneurship Program with two sessions

1. "Business is not a Dream - Entrepreneurship and Funding Strategy" by Mr. Thangavel Puhal

2. Young Success Stories of Entrepreneurs - The way to go moment" by Vetri – Tours and Travels

- 3. Women Entrepreneurship Ms. Suganya
- 4. Entrepreneurial Stall (if offline)
- Webinar on the topic "Communication Skills"- Mr. Mahesh Kumar, Mr. Hari Haran
- Webinar on the topic "Excel an alternative approach to SPSS"- by Prof. Arun Kumar
- Green Initiatives Destination to create sustainable development
- Newsletter (Even Semester)

#### **Collaboration (MoU)**

• MoU with Corpversity

#### **Students Activities**

- Guest Lecture on Tally with GST by Aristo Technologies
- Buddy Program To match students with disabilities with their peers, these program strives to eliminate social isolation and activities with the guidance of teachers.

#### **BUDDY PROGRAM**

The **Buddy System** encourages open and effective dialogue among peers and tends to break down social barriers with their classmates. It helps create a collaborative learning environment in which peers feel less hesitant to raise questions. This enables students to develop social networks, cross-cultural experiences.

Suggested Buddy Program Implementation Plan:

- As a first step we need to create a simple and formal document that outlines what the Buddy Program is and what the role of the buddy is all about.
- Select Potential "Buddies", once we select the potential student (may be association member) to assume the buddy role, we need to share that document with her to ensure that the program will be as smooth as possible. Buddies need to be fully responsible for their role and they should treat it as a responsibility.
- Provide a checklist of the topics the buddy should cover with the new comers.
- Encourage knowledge sharing
- Evaluate and brief the buddy and the new comers.

#### Academic Year 2023-24

#### Academics

• Skill Based Courses such as can be introduced.

#### **Staff Activities**

• FDP on the topic related to Hands on Training on "Tools and Techniques to make online class more effective"

#### **Department Events/Programs**

- Magazine (Odd Semester)
- Educate people on sanitation, cleanliness and good habits as a CSR activity
- Newsletter (Even Semester)

#### Collaboration

• Plans to send faculty members for Semester Exchange Programs to Le Tourneau University or Liverpool Hope University

#### **Students Activities**

- How to prepare for UCG NET?
- Conduct 'Placement Training Programs' for Final year students.

#### Academic Year 2024-25

#### Academics

• Plans to write a proposal for a Minor Project

#### **Staff Activities**

• FDP on "Research Proposal – UCG vs ICSSR"

#### **Department Events/Programs**

- Since it is the Department's 10<sup>th</sup> anniversary, plans to organize an International/National Conference along with the release of the Department Magazine and Awareness Exhibitions
- Newsletter (Even Semester)

#### **Students Activities**

- Online Workshop on "Basic to Advance Excel and SPSS"
- Conduct 'Carrier Development Programs' for Final year students.

#### Academic Year 2025-26

#### Academics

Can include these subjects or short term courses

- Logistics and Supply chain Management.
- Digital Marketing
- Short Term Course- Value added to your Graduation.
- > On the topic Finance / Banking / Insurance.

#### **Staff Activities**

- Apply for Ph.D Guideship
- Conduct "Online Refresher Courses" for Staff

#### **Department Events/Programs**

- CSR Activity on "Creating Awareness on Environment" and Plant saplings
- Newsletter (Even Semester)

#### **Students Activities**

• Motivational Speech on "What next after graduation - Opportunities and Challenges"

#### 2026 – 2030 (Next 5 yr Plan)

In Addition to the regular activities of the department, as per the requirements of the NEP policy the below listed courses and programs can be implemented.

- Open Distance Learning
- Online Courses can be introduced for Outsiders
- Innovative and Intensive Training
- Curriculum will be framed for providing Vocational Education or Vocational Education and Training (VET), also called Career and Technical Education (CTE) prepares learners for jobs that are based in manual or practical activities, traditionally non-academic and totally related to a specific trade, occupation or vocation.
- List of Vocational Courses or Certificate Courses (minimum duration 6 months)
  - Event Management Health and Safety Art and Crafts Photography Baking Class - Biscuits, Cake Making, Chocolates Fashion Designing Interior Designing Basics of Tailoring

## DEPARTMENT OF COMMERCE-ACCOUNTING & FINANCE

#### FIVE YEAR /TEN YEAR PLAN

The deliberation of 5 year and 10 year plans are broken down into the following subheadings:

#### I. ACADEMICS

- To launch B.Com Corporate Secretaryship Program as its demand has been sensed high among the Commerce applicants.
- To commence an additional section, in order to, accommodate the overwhelming response of applicants for A&F Department.
- To initiate a new Diploma Course in Accountancy and Auditing, for the purpose of, furthering the students' knowledge.

#### II. DIVERSITY AND INCLUSION

• To allocate 2% of applications for NRI students.

## **III. FUNDING**

- To meet the financial needs of the department, a specified amount in the Course fee would be included.
- To create an Endowment Fund every year by raising Rs.20,000 from the passed out batches and the same would be utilized for Convocation prize distribution purpose.

### IV. STUDENTS EXPERIENCE

#### INTRODUCTION OF NEW UGC COURSES

• To offer International Taxation and Technology Course (ITTC) partnered with Ernst & Young as industry partner which aims at tapping the growing demand for tax professionals.

## NEW PAPERS IN EMERGING AREAS

- To ensure employability and also help in meeting societal and industry needs as per the changing business scenario, Starting interdisciplinary programs like Business Analytics, Financial Economics, Health Economics and Creative and Digital Marketing
- To include Skill based courses such as business analysis (using Python programming and R) and digital visualisation course (using Power BI) in the curriculum. CAMPUS TO CORPORATE PRACTICE:
- To introduce bridge courses on professional skills that lays emphasis on problemsolving, analytical thinking, critical thinking and design thinking which are the most preferred creativity imperatives that the workforce of today are expected to demonstrate.

#### • MAGAZINE

To release a yearly Magazine which would provide an insight into the Department happenings.

• ONLINE COURSES

To include Online courses on Digital Marketing, Business Analytics, Corporate Communication and Innovation Management.

- V WEBINARS
- To conduct Webinar on Financial Planning, Sustainable Environment, Career Guidance and Campus to Corporate Excellence.

#### VI WORKSHOP

• To conduct a workshop on Current Affairs, SPSS, E-Filing and Life skill program

#### VII CONFERENCE

- To hold a National Conference on GST
- To conduct an International Conference.

#### VIII PROJECTS

- To pursue core paper based projects
- Applying major / minor research projects wherein students can also be allowed and extra credit can be given to them.
- PAPER PUBLICATION BY STUDENTS & FACULTY

For problem oriented papers like Statistics, Corporate Accounting, Management a/c, Cost a/c, Financial management, Income tax and Business Economics compulsory research based assignment to be incorporated.

• Making it mandatory for 15 credit project students.

## VI. COLLOBORATIONS

- To have tie ups with esteemed institutions and Offer global accounting certification such as ACCA, CIMA, CMA,BSE etc. embedded in the curriculum, which will provide students an opportunity to complete their degree along with a professional certification. This also gives additional skills and knowledge essential to approach the corporate world.
- To involve industry partners in developing and designing the curriculum, Continuously monitoring corporate expectations through their feedback and understanding and addressing industry needs by incorporating them in curriculum which will lead to better internship opportunities for the students and final placements
- To add value to student education by providing them exposure to international business environment -International internships through reputed student bodies like AIESTE/AIESEC would be brought in.

**DEPARTMENT OF COMMERCE** 

\_\_\_\_\_

## **B.COM (COMPUTER APPLICATIONS)**

#### **Five Year Plan of the Department**

- To conduct bridge courses for students based on their level of learning to fill the gap between Academics and Industry
- To organise skill based short term courses, workshops and value-added courses for the holistic development of the students
- To orchestrate programs on professional ethics and universal values in the digital age
- To encourage the students on innovative ideas and startup to develop their entrepreneurial skills
- To vitalize students to present and publish research papers in order to announce their interest in the field of research
- To develop student's creativity by organizing curricular, co-curricular activities and by releasing department magazine.
- To promote the research activities of the faculty

#### **Ten Year Plan of the Department**

- To organize National and International Conferences and workshops
- To introduce new courses in business intelligence and data driven innovations

• To have linkages with industries for internships, projects, resource persons and to have MoUs

-----

## DEPARTMENT OF COMMERCE

## **B.COM (HONOURS)**

### B.Com (Honours) – 5/10 Years Plan

#### Curriculum Development

The following papers will be introduced

- NME paper on Emotional Intelligence
- Core Papers- (i) Forensic Accounting as a part of Financial Accounting paper;
   (ii) Digital Marketing

#### Student Development

- Entrepreneurship workshop will be organized every year to inculcate entrepreneurial spirit in students.
- Workshop on "employability skills and Stress Management will be organized to make the students placement-ready.
- Department Magazine will be issued every year as a part of learner centric activity in any area of students' interest.
- Bridge courses on Financial Accounting, Economics and Statistics will be offered to first year students in order to prepare them to cope up with the regular courses.
- Students will be encouraged to participate in Inter Collegiate competitions, Workshops, Webinars and Conferences.

#### > Staff Development

- Organizing International Conference
- Staff will be motivated to organize and participate in Webinars, Workshops, Seminars, Refresher courses and Conferences
  - FDP that are planned for the coming years
  - 1. Application of Artificial Intelligence
  - 2. Paradigm shift to Educational Practice.
  - 3. DEMAT Account and Online Stock Trading.
  - 4. Online Teaching Aids

#### Workshops that are planned for the coming years

- 1. Statistical Analysis for Research
- 2. e-filing of Income Tax returns.
- 3. Mind Matters
- 4. E-Commerce Web-site Designing and Development.

5. Digital Marketing.

## > Research

- Students will be motivated to publish research papers in journals, at least two publications each year.
- $\circ~$  Staff will encouraged to publish research papers in journals, each staff minimum one per year.
- One Minor Project of social relevance will be taken by the department.

\_\_\_\_\_

## > Collaboration

- Entering into MoU with at least two companies for Internship and Guest lecture purpose.
- Renewal of Existing MoUs.

## **DEPARTMENT OF COMMERCE - M.Com**

#### **Five Year Department plans**

- Organising a National Conference/Webinar on "Indian Financial System Before and After Pandemic An Overview"
- Organising an International Conference/Webinar on "Sustainable Development Goals Are we far beyond the Reach?"
- Organising a workshop on Research Methodology, SCP and Art of Sustainable Living
- Field visits for courses, SCP, Art of Sustainable Living, Logistics, etc.
- To Organize more events promoting Entrepreneurship and Sustainability.

\_\_\_\_\_

• Upgrading the department as PG Research Department in Commerce.

**DEPARTMENT OF MANAGEMENT STUDIES - BBA** 

## FIVE YEAR PLAN:

- Invoke and enhance creativity and innovation by coming up with ideas for funded projects
- To start a mentoring program and have a mentor-protégé set up.
- Paper presentation in UGC Care Journals, Scopus and SCI Indexed Journals by staff and students
- Publications of Top 5 students project work
- Introducing courses like MBA/ DBA,
- Introducing certification courses on emerging areas of marketing, finance and HRM
- Certificate course in Project Management.

• Introduce papers in emerging areas of management like Chatbots, Influencer Marketing, Social Media Marketing, Conversational Marketing, Green Marketing, Green HRM, Cryptocurency, Digital Finance and Money, Workforce Diversity, Gender Studies

# TEN YEAR PLAN:

- Paper presentation in UGC Care Journals, Scopus and SCI Indexed Journals by staff and students
- Courses like PG Diploma in Marketing and HRM, MBA(in BFSI), MBA(Analytics) as a Vertical,
- Introducing online courses or diploma courses in marketing management
- Invoking a Research Department.
- To come up with a community garden to foster sustainability and a community market to sell the products from the community garden.
- To convert the Business administration Dept as School of Management/School of Business which includes basic programs, post graduation, master in philosophy and doctorate in business Management and also new related courses in the same stream can be introduced to enhance further research in BUSINESS

\_\_\_\_\_

# **DEPARTMENT OF MANAGEMENT STUDIES (MA HRM)**

## **5 YEAR PLANS**

S.No	Category	Action Plan
1.	Paper	• The department plans to publish a minimum of 4 papers in UGC Care Journals every year as a combined work by the faculty of the department and the final year students of the department.
	publications	• The department also plans to ensure that faculty of the department publish papers in UGC care Journals individually or as a combined work between two/three faculty of the department.
2.		<ul> <li>The department ensures to review the academic syllabus every year and tries to introduce new papers in related areas of HR and management also in order to ensure to be in line with current trend in management the departments plans to introduce new papers in         <ul> <li>HR Analytics</li> <li>Knowledge Management</li> </ul> </li> </ul>

	Introduction of New papers in Emerging areas	<ul> <li>The department also plans to Conduct certification courses on         <ul> <li>✓ Digital HR</li> <li>✓ Manpower Planning</li> <li>✓ Employee On-boarding</li> <li>✓ HR Agile</li> <li>✓ Employer branding for talent acquisition</li> </ul> </li> <li>The department plans to create a Management Dictionary comprising of management terms and its meaning and also take measures to get the dictionary copyrighted. The Project will involve the students and faculty of the department.</li> </ul>				
3.	Introduction of UGC courses	<ul> <li>The department plans to introduce UGC courses available on the various E- platforms as part of the Curriculum.</li> <li>Students will be encouraged to take courses in areas such as         <ul> <li>✓ Leadership</li> <li>✓ Psychology related courses pertaining to management.</li> </ul> </li> </ul>				

# **10 YEAR PLANS OF THE DEPARTMENT**

S.No	Category	Action Plan			
1.	Paper Publications	• The Department plans to ensure that every faculty of the department publishes a minimum of one research paper during an academic year.			
2.	Collaborate with foreign universities	• The Department plans to collaborate with the foreign universities (LP/LU) and invite resource persons from the universities to conduct guest lectures, webinars, workshops and international conferences.			
3.	Projects plan to apply	<ul> <li>The department plans to research and develop projects in areas of Green HRM and Corporate social responsibility and sustainability.</li> <li>The department also plans to apply for research projects offered in the state/central /corporate levels in the above areas.</li> </ul>			
4.	Academic upgradation	<ul> <li>The department plans to introduce short term Diploma courses in areas relate HR and management.</li> <li>The department also plans to introduce dual specialisation courses in MA HRM</li> </ul>			

\_\_\_\_\_

# **DEPARTMENT OF CORPORATE ECONOMICS**

## **PROPOSAL FOR THE NEXT 5 YRS**

SL	Nature of plan	Type and no	Proposed year
NO			
1	Projects	One project	By 2024
2.	Paper publication	One each faculty	Once in two years
3.	New courses	As and when required as new areas emerge	Ву 2025
4	Co-curricular workshops	Conducted every year	Annual
5	Conferences	National level conducted once in two years	Once in two years
6.	Webinars	Twice in a year	Annual
7.	Value added courses	Two courses (data analytics and digital marketing)	Annual
8.	PG program	M.A economics	By 2025
9	Develop database of all passed out students	Inviting alumna to deliver talks on a regular basis	By 2024

#### **PROPOSAL FOR NEXT TEN YEARS**

To promote research activities and create more value added courses.

# **DEPARTMENT OF COMPUTER APPLICATIONS (BCA)**

\_\_\_\_\_

## **STRATEGIC PLAN – 2021 - 2030**

#### Vision

The department aims to be recognized as one of the top computer science departments in the nation, attracting the best students and faculty.

#### Mission

The focus is on creating innovative teaching learning environment, a well-defined structured educational system, high profile academic faculty, state-of-the-art infrastructural facility, high concentration of talent, plentiful resources, and policies designed to encourage the pursuit of academic and educational excellence so that the students are intellectually well-trained, morally upright, socially aware and spiritually inspired and well prepared to be the leaders and decision makers of the society.

The department aims to formulate the strategies on these following key areas

- 1. Academic Excellence
- 2. Research Excellence
- 3. Collaborations
- 4. Best in class Infrastructure

The developments on these key areas can be planned and carried out in two phases as

Strategic plan I	-	2021-2026
Strategic Plan II		2026-2031

#### STRATEGIC PLAN I- 2021- 2026

#### **OBJECTIVE:**

To attain the top- tier ranking by expanding the scale of operations. Significant increase in the students and faculty strength to be achieved by introducing new PG and UG programs which are in great demand.

#### 1. Academic Excellence

The department is dedicated to deliver quality education matching the technology advancements and strives to instill the moral values and principles to mold the students to be better citizens of the society.

#### Curriculum review and updation

The department aims to design and develop a curriculum which has relevance to the local, national, regional and global developmental needs, with well-defined learning objectives and outcomes at program and course level.

Curriculum is reviewed annually through Departmental and Faculty Board of Studies and Academic Council. The review of the courses is undertaken according to prescribed norms of the university, feedback from all stakeholders, analysis of current market trends and industry requirements.

- > New courses which are relevant in the market and futuristic will be introduced.
- This will include courses on Natural Language Processing, Artificial Intelligence and Deep Learning, Robotics etc.

With the motive to enhance student learning, experience and outcomes the curriculum would be reviewed and redeveloped possibly by introducing the following list of possible new courses as core/core electives.

- Artificial Intelligence and Deep Learning
- Statistics of Artificial intelligence

- Ethical Hacking
- Social Network Analysis
- Advanced Database Management System
- Open Source Software
- Natural Language Processing
- Block Chain Architecture and its applications
- Green Computing,
- Business Intelligence and its applications

#### Short- term Courses

Multiple short-term courses can be offered online targeting working professionals and students seeking short-term professional development programs. This will bring in visibility and helps to generate funds.

- These courses can be offered on a standalone basis or in collaboration with industry / academic institutions.
- Trending courses such as Data Analytics, Business Analytics, Block Chain technology can be offered.
- > E-content and learning materials can be prepared and provided for these courses.

#### Introduction of new UG and PG programs

- > New programs are planned to be introduced in the upcoming years.
  - ✓ MSc in Data Science, introduced by 2022
  - ✓ B.sc Artificial Intelligence introduced by 2023
  - ✓ MSc Computer Graphics, introduced by 2025.
- ➢ Integrated M.sc/Ph.D. Programs can be offered.

## Four Year Pattern with Multiple Entry and exit points

- All Graduate programs can be structured into a 4-year pattern with multiple entry and exit points.
- ▶ Research work can be introduced in the fourth year of the graduate program.

#### Value added courses

- ✓ Value-added courses imparting transferable life skills can be offered with 30 or more contact hours.
- ✓ Aims to provide skill-oriented training, with the objective of improving the employability skills of students and to bridge the skill gaps to make them industry ready.

The list of courses which can be offered are listed as follows.

- ✓ Graphics and Animation
- ✓ Digital Marketing
- ✓ Business Analytics
- ✓ Web Design
- ✓ Aptitude Test Training
- ✓ Soft Skills Training

## **Innovation in Teaching/Learning**

- ✓ The teaching learning process should be supported with Pedagogical Innovations and technology which is crucial to the successful implementation of the academic plan.
- ✓ The traditional learning methodologies would be replaced with experiential learning (learning through doing) and technology-enabled active learning.
- ✓ Hybrid learning a combination of online and offline, active learning and flipped classroom techniques would be employed to make learning more experiential and student centric.

#### Seminars, Webinars and Workshops

- ✓ Organizing several webinars and workshops on recent trends and technologies helps the students gain a wide exposure on the subject.
- ✓ The number of webinars offered on Recent Technologies can be increased to six per academic year and on Career Guidance and Preparation for competitive exams and higher studies to three per academic year.
- ✓ More number of workshops could be organized in the upcoming years to support the need and to boost the employable skills of the students.

The possible list of topics for the webinars and workshops can be considered for the next few years.

- Project Development strategies
- Cyber Security
- o Career Guidance
- Tips to crack Competitive Exams
- o IOT and Embedded Systems
- Deep Learning
- Preparation for Higher Studies
- o Advanced IOT and Embedded Systems
- AI Based Object Detection
- o Web series on Current Technologies by Alumnae
- o Virtual Reality
- o Blockchain Technology

#### Faculty development programs

The number of Faculty Development Programmes (FDP) can be increased to facilitate the upgradation of knowledge and skills of teachers on the recent technologies.

#### **Student Association-COMAP**

The department plans to organize various activities throughout the academic year as part of the association including techno meet, online quizzes, inter-departmental competitions etc.

## 2. Research Excellence

Achieving research excellence would be key to addressing national and global challenges such as like development of cost-effective healthcare, socially sustainable transport planning, agricultural innovation etc.

#### **Journal Publications and Conferences**

1. Attaining an exponential increase in the number of publications in the form of research articles and research papers in peer reviewed journals like UGC care, science index, Scopus, IEEE and other UGC recognized reputed journals.

2. To increase the number of paper presentations and poster presentations by students and faculty in national-International conferences, symposium, colloquium, etc.

3. Every year a national/international conference in either self-disciplinary or inter disciplinary can be organised.

#### **Consultancy Services**

1. Initiatives to be taken to actively participate in various sponsored research projects and consultancy services.

2. Various activities can be planned where in faculty and students can share their expertise as major inputs to the external agencies.

## **Resource Mobilization activities**

- ✓ To ensure fund availability and to promote research culture we would plan to attract Industry sponsored projects, Government and other grants, endowments.
- ✓ To get high value consulting projects with industry which strengthens industry relationships and improves employer reputation.
- ✓ To organize Entrepreneurship Awareness Programmes (EAPs) and skill based training for the students to promote and market their ideas.

## **Research Proposals**

- ✓ Initiatives will be taken to prepare the proposals and to apply for a minimum of two UGC Minor Research Projects and to get approval by 2023.
- ✓ The students will be prepared and guided to apply for Student Seed Grants for their projects.

# **Innovation Activities**

As part of the Institution Innovation council of the institution the following activities can be planned.

1. Intradepartmental Hackathon

A design sprint-like event with a specific theme can be conducted within our department. The students can collaborate intensively on innovative software projects.

2. Innovative product development

The students who excel in coding and debugging can be involved in this to develop an innovative product.

A three- tier innovative program can be conducted within the department where in each student has to develop a product, which involves three steps:

Idea Proposal, Prototype development and finished product submission.

#### 3. Collaborations:

It is crucial to forge partnerships and develop network and alliances in order to excel.

Increased engagement with industries, universities and community locally and globally would help in providing a holistic learning and research experience for the students and faculty.

#### Academic Collaborations:

To establish links for students, staff, faculty and program with partner universities around the world such as Liver pool hope University, Concordia University and Le Tourneau University.

#### Collaboration with universities/ research institutes

Strengthening the existing collaborations with the partner universities around the world such as Liver pool hope University, Concordia University and Le Tourneau University.

#### Faculty exchange programs

- ✓ Promoting faculty exchange programs to attract visiting faculty from top ranked educational institutions across the globe.
- ✓ Faculty with high profile and specialization in recent technologies from other institutions can be used as resource person for workshops.

## **Industry Partnerships:**

- ✓ More industry tie ups can be planned to get their inputs in designing a market-relevant curriculum and help in placements.
- ✓ Industry partnerships can be developed through our Alumni to ensure facilitation of corporate training, recruitment process and employing student interns, getting resource persons for workshops, webinars and conferences.

## **Collaborations for Societal Impact**

To promote social awareness among students they can be involved in community development through various activities in areas such as Education, Environment, and Sustainability.

#### Education

The department offers Service Learning project for the II year students to promote computer literacy of underprivileged students and to enhance experiential learning and shape holistic learning for the students.

#### **Build strong alumni relations**

- ✓ Strong relations with alumni are essential to improve the department's position in national rankings, meet the expectations of continuous improvement processes.
- ✓ A separate page can be created on the college website to support online alumnae registrations and to generate funds through online.

#### 4. Best in class Infrastructure

The infrastructure development can be based on "long life, loose fit" strategy to anticipate the future in a flexible and adaptable way.

Adaptive re-use is one of the most sustainable strategies in infrastructure development. The existing infrastructure for classrooms and Lab can be revamped by integrating modern technology, to include efficient use of space, and with flexible interior environments. Upgrading the infrastructure with

high speed Wifi connectivity

- high configuration servers for the lab
- > security layer for the systems connected in the network.
- > Private cloud to deploy ERP software with proper security features.

#### STRATEGIC PLAN II – 2026-2031

# Objective: Fostering the research activities of the department and to increase the quantity and quality of research output thereby achieving the status of research department with excellence by 2031.

1. Academic Excellence

#### Curriculum review and updation

> To identify and introduce new courses which are relevant in the market and futuristic.

#### Short- term Courses

Continue to offer multiple short-term courses on a stand-alone basis or in collaboration with industry / academic institutions to generate more funds.

#### Introduction of new UG and PG programs

New UG/PG programs which are in great demand can be offered.

#### **Innovation in Teaching/Learning**

✓ The curriculum would be redesigned to include the components of Research and Design Experience and internships, to ensure students with better employability skills

#### **Students' strength and Diversity**

The primary focus is to increase the student enrolment and retention by maintaining a high quality of education.

- ✓ To promote diversity of students we would attract students from other states and international students.
- $\checkmark$  Aiming to get 5% of the student population from other states/countries by 2030.
- ✓ This would be done by introducing scholarships for meritorious candidates from other states or countries with high potential and low representation.
- $\checkmark$  A strategic tie-up with banks can be planned to provide financial assistance for students in the form a student loan.

# 2. Research Excellence

We can introduce doctoral programs and there by the department can progress into a research department.

Research centers can be developed in key areas such as Machine Learning, Data Analytics, information security.

# **Centre of Excellence (COE)**

- ✓ To develop Centre of Excellence in areas which address critical issues and cuts across multiple disciplines.
- ✓ Aims to improve the quality of research publications by investing in faculty development and extensively building partnerships with leading institutions.
- ✓ Develop intradisciplinary labs inside the department to promote inter-disciplinary research where researchers from sub-disciplines will be working together.

# 3. Collaborations

# Collaboration with world-class universities/ research institutes

- ✓ Creating new Collaborations to aid in knowledge development through students and faculty exchange programs and research collaboration.
- ✓ MoUs would be signed for collaborative research and these collaborations would be with universities in the top rankings.

## **Collaborations for Societal Impact**

To promote social awareness among students they can be involved in community development through various activities in areas such as Public Health etc.

## Health

We can partner with NGO's to organize health campaigns in nearby areas and to promote the health of people in association with public health organisations.

## 4. Best in Class Infrastructure

To accommodate the planned increase in student and faculty, we must obtain an additional 10,000 sq.ft of space for research, academic and classrooms.

Upgrading the infrastructure with

> All classrooms to replaced with smart classrooms,

> Automation of attendance through Biometric and RFID.

To develop and establish the following facilities

- Robotics Lab
- Research lab
- Centres for Excellence
- Incubation centres

Snapshot of the department by 2031

No of UG programmes	-	3
No of PG programmes	-	2
No of UG students	-	450
No of PG students	-	104
No. of Ph.D students	-	20
Enrollment for short term courses	-	200

# DEPARTMENT OF M.SC COMPUTER SCIENCE AND TECHNOLOGY

## **Regular Activities planned for every academic year**

- 1. Online / Offline Certificate course on SPSS / Web design using WordPress for students.
- 2. Two Days Online / Offline Workshop on any Recent Trends/Tools in Computing.
- 3. Power Seminar in collaboration with ICTACT.
- 4. Webinar in collaboration with CES and CWS with National / International Resource Person.
- 5. Faculty Development Programme / Development Programme for Non-teaching staff based on the current need.
- 6. Intercollegiate Technomeet Comp Sync for students.
- 7. Service-Learning Projects based on the current need.

## **Other Activities planned for the Next Five Years 2021 – 2026**

## Curricular Aspects

- 1. **Curriculum** will be updated every year to meet current needs and global standards. The Department has planned to include following Electives:
  - a. Robotics Check the Feasibility of offering the elective by utilizing the expertise in Liverpool Hope University
  - b. Cyber Security
  - c. Augmented Reality / Cyber Forensic
  - d. Edge Computing
  - e. Data Science Foundation & Application

- 2. The following **Multidisciplinary programmes** based on market demand are identified. To check the feasibility of offering any one among these.
  - a. Data Science and Bioinformatics (CST, BioTechnology, Maths)
  - b. Artificial Intelligence and Cognitive Science (CST, Psychology, Corp Eco)
  - c. Computer Science with Management (CST, BBA, Corp Eco)
  - d. Forensic Science (CST, Maths, Physics, Chemistry, BioTech)
  - e. Environmental Computing (CST, BioTech, Chemistry, Maths)
- 3. Offer any one among the following **Certification course** based on current trend Online / Offline
  - a. SPSS
  - b. Web App Development
  - c. Mobile App Development
  - d. Data Analytics using Python
- 4. **Workshop** with Resource persons from Liverpool Hope University / LeTourneau University
- 5. Plan for any one of the following **Vocational Course** in Collaboration with NIIT / NGO/Industry
  - a. Documentation & Presentation
  - b. Web Technologies
  - c. Software Development
  - d. Data Analytics

## **Teaching Learning**

- 1. **E Content** for the following basic courses to be developed to build the Digital Library by Recording the Lectures from this academic year.
  - a. Problem Solving Techniques using C
  - b. Object Oriented Programming using Java
  - c. Data Structures
  - d. Computer Organization & Assembly Language Programming
  - e. Principles of Operating Systems
  - f. Relational Database Management systems
- 2. **E Learning** package for the following courses will be developed to aid Open Distance Learning (ODL) and Online Certification courses
  - a. Documentation & Preparation
  - b. Web Design & Control
- 3. One **Faculty Development Programme** with Resource persons from Liverpool Hope University / LeTourneau University

# **Research & Innovation**

- 1. To have a minimum of one **Research Proj**ect by utilizing grants like UGC.
- 2. To have a minimum of one research project by utilizing **Student Seed grants** every year
- 3. 50% of the faculty will be **Research Guides**
- 4. A Minimum of two Research Publication in refereed Journals every year
- 5. To have a minimum of one Book / Chapter publication

# Student Support

- 1. To arrange **Placements** for PG CST students with the help of Illustrious Alumnae of the Department.
- 2. To arrange **Scholarship** for deserving students with the help of Alumnae of the Department
- 3. **Workshop** with Resource persons from Liverpool Hope University / LeTourneau University
- 4. **Tutorial system** for below average students where remedial classes will be conducted by their respective Advisors.
- 5. To arrange more technical, skill development and value-added **activities** through the Department Association Renaissance
- 6. To utilize **semester abroad programme** offered by Liverpool Hope University / LeTourneau University

# **Other Activities planned for the subsequent Five Years 2026 – 2031**

# **Curricular Aspects**

- 1. To start offering the proposed Multidisciplinary programme
- 2. To Check the feasibility in offering a four-year integrated B Ed programmes or a Dual Major Holistic Bachelor's Degree in Education specialized in Computer Science as this degree will be the requirement for School Teaching
- 3. To offer any one of the following **Vocational Course** in Collaboration with NIIT / NGO/Industry
  - a. Documentation & Presentation
  - b. Advanced Web Designing
  - c. Hardware Assembly & Maintenance
- 4. Explore the possibility in enabling students to take up elective courses offered by Liverpool Hope University / LeTourneau University and map those credits in our CGPA

# **Teaching Learning**

- 1. E Content for intermediate courses to be developed and added to the Digital Library
  - a. Computer Networks

- b. Design and Analysis of Algorithms
- c. Software Engineering
- d. Computer Graphics & Multimedia
- e. Software Testing
- 2. E Learning package for other courses will be developed to aid Open Distance Learning (ODL) and Online Certification courses
- 3. Explore possibility in offering International Certification courses Online in collaboration with Liverpool Hope University / LeTourneau University

# **Research & Innovation**

- 1. To have a minimum of one Research Project by utilizing grants like UGC.
- 2. To have a minimum of one research project by utilizing Student Seed grants every year
- 3. 75% of the faculty will be research guides
- 4. A Minimum of two Research Publication in refereed Journals every year
- 5. To have a minimum of one Book / Chapter publication

# Student Support

- 1. To enhance placements for PG CST students with the help of Illustrious Alumnae of the Department.
- 2. To add more scholarships for deserving students with the help of Alumnae of the Department
- 3. To arrange more technical, skill development and value-added activities through the Department Association Renaissance
- 4. To strengthen the Tutorial system for below average students where remedial classes will be conducted by their respective Advisors.

# DEPARTMENT OF INFORMATION TECHNOLOGY

## Ten Year Strategic Plan (2021-2030)

The following framework is inclined towards the development of the department to bring it to Centre of Excellence.

# New courses and Admission:

• During the first five year plan period the department has planned to start any one course from each of the following undergraduate and post graduate programmes and thus the current student strength of 200 will be increased by 50 % by the department

in the first year of start of the course. Within Five years 100% of the students strength will be increased.

- 1. B.Sc Data Science
- 2. B.Sc Information Security and Digital Forensics
- 3. B.Sc Artificial Intelligence
- 4. M.Sc Data Science
- 5. M.Sc Cyber Security
- The department plans to admit students from diverse regions of our country that would help to endorse the programmes nationwide and helps to integrate and promote the cultures.
- In the next five years department aims to admit foreign students and thus elevate the programme standards to global level.

#### Lab Set up:

- The department aims to set up a new Artificial Intelligence lab and remodeling / modernizing the existing lab for supporting experiential learning.
- The department plans to set up the industry collaborated lab for hands on experience and research oriented activities.
- The department plans to provide centralized computer lab with all computing facilities for academic supports like web casting, E-content (4 contents per semester), webinar, online class, NPTEL with VDI and VMware products.

#### **Research Plans:**

- The standards of research education for PG students to be raised.
- There is a plan for at least one minor and major research project to be carried out funded by the UGC or by any funding agency.
- To upturn the outcome of research and generates patent.
- To reinforce the infrastructures for research and innovation cell.
- To facilitate the research and revolution in view with the multi-disciplinary area Incubation Centre could be deployed.

## **Community Service Plan:**

- Using the emerging Data analytics and IOT technology department plans at the development of in-house projects for the college community by motivating the students under the able guidance of the faculties
- There is a plan to tie up with NGO's to develop necessary projects for the society by incorporating the Machine Learning tools along with other health care / biotechnology/ food science department.
- There is a plan to visit hospitals and homes to provide service to the needy people by collecting funds from interested staff, students and volunteers

## **Student Resource and Developmental Plan:**

- Conducting more certificate courses as given below to non-computer science major students to promote computer literacy and inculcate the awareness on latest technologies.
  - > Networking
  - Digital Forensics
  - Intellectual Property Rights
- Induction training and entrepreneurship program to be conducted.
- Encourage our department students to bring out green revolution by avoiding the usage of plastics inside the campus.
- To strengthen our department alumnae by connecting them through social media platforms and keep them connected by posting of department activities regularly.

## **Faculty Resource development**

- To conduct FDP to improve, strengthen the research and technical skills of faculties at par with the global competency.
- Ensuring of getting research guide ship to guide Ph.D. research scholars within five years.
- Encourage faculty members to take part as a resource person for workshops and seminars on latest techniques.

## Year 2021-2022

Writing proposals to start up the new courses.

## Year 2022-2023

- 1. To start one new course.
- 2. To prepare a proposal and apply for one minor/major research project.
- 3. Visiting hospitals, schools for doing community service for the needy people.
- 4. To conduct one FDP/Conference/Workshop every year.
- 5. IOT based In-house project to help our college community.

#### Year 2023-2024

- 1. To start another one new course
- 2. Initiate steps to generate patent.
- 3. To set up Artificial Intelligence lab / Industry collaboration lab

## Year 2024-2025

- 1. Centralized Computer Centre
- 2. One minor/major research project proposal
- 3. NGO tie up

## Year 2025-2026

Getting Guide ships for faculty members.

# Year 2026-2030

- 1. Centralized Computer Centre
- 2. Products development through Incubation Centre.

# DEPARTMENT OF VISUAL COMMUNICATION

\_\_\_\_\_

# **Five Year Plans**

1. Research Projects: Department plans to apply for UGC Minor Research Projects.

# 2. Research Paper Presentation and Publications:

- a. **Students:** For the Course Media Research Methods final year students will be trained to write research paper and two best research papers per year will be presented in the National and International Conferences /Seminars.
- b. **Faculty:** The department plans to publish research papers in UGC Scopus and Peer Reviewed Journals.

# 3. Introduction of New Courses under UGC:

a. Broad areas: Entrepreneurship and Media Management

# 4. New coursers in the emerging areas:

- a. Artificial Intelligence in Media
- b. Introduction to UI and UX
- c. Introduce new software courses Nuke and Blender
- 5. **New Programme:** To commence the new programme, M.Sc Visual Communication 2022- 2023.

## 6. Diploma Courses & Consultancies :

The department plant to conduct following diploma courses

- a. Radio Programme production
- b. Aesthetics of Photography
- c. Graphic Design
- 7. The department plans to project the student's project in social media and other interactive sites such as Behance, YouTube and Instagram etc.

# 8. Conferences and other academic activities

- a. Department plans to organize both National and International Conference once in two years.
- b. To organize an Inter- Collegiate Virtual Workshop on relevant topics annually.
- c. To organize 3 Webinars at the National Level annually.
- d. To organize seminar on Gender Equality and Sustainable Environment.
- e. To organize an Inter- departmental Cultural Fest annually.
- f. To organize a Guest Lecture series for core courses annually.

- g. To organize a one day seminar with the Language Department to understand the importance of Language in Communication/ Social Media.
- h. To conduct a poster/ Art competition on International Women's Day/Press Day annually.
- i. To conduct a Short Film/ Documentary Competition on International Women's Day annually.

# 9. Collaborations with Indian /Foreign Educational Institutes:

a. MOU with Le Tourneau University

10. Pan Asian Programme with Christ University, Bangalore.

# **Ten Year Plans**

- 1. To establish the department of Visual Communication as Research Department.
- 2. To induct a fully funded Media studies wing with a state of the art Video and Animation Design Studio.
- 3. A permanent Art and Photography gallery to host national exhibitions and seminars.
- 4. To initiate tie-up with media industries like Radio, Academies, Channel, and Digital media forums.
- 5. Author and co-author media studies books, memoire, and Journal.
- 6. To commemorate 25<sup>th</sup> anniversary of the department in the year 2028, the department plans to organize a grand gala comprising of alumina home coming, conferences, release of coffee table book to document the department progression and achievements.
- 7. Initiate more convocation prizes for the student who excels in all core electives, research and contribution towards the enrichment of the department.

# **DEPARTMENT OF PSYCHOLOGY – SHIFT II**

# <u>Five-year plan</u>

Introducing new courses – encouraging holistic, multidisciplina ry education.	Enhancing student experience – pedagogy	Enhancing student experience – assessment	Faculty development	Facilitatin g online distance education	Training
Introduce an allied paper on Sociology to develop a holistic understanding of Psychology in contemporary society with a project addressing	Holistic teaching methods including various relevant disciplines in discussions. Inclusive teaching methods – for slow and fast learners. Application-oriented teaching: Documenting Indian examples for western theoretical concepts.	Specific assessment framework for each subject to ensure learning outcomes and skill development.	Applying for seed grant, regular paper publications.	Creating e- content to be made available in the online platform – YouTube.	Encourage students to engage in research: Conducting workshops on writing skills, scientific literature review, and

current social issues to kindle a spirit of service.				publication process.
Introducing new branches of Psychology in the curriculum – Cognitive psychology, Indian psychology, Forensic psychology	Inaugurate a club for the department for student centric activities.	Varied assessment techniques – case analysis, profiling, report writing, relevant journal article review.	Engaging in interdisciplinar y research.	Think tank groups – to discuss relevant case studies and literature.
Include an additional component for core papers: 1. Skill training - Basic Counselling Skills. 2. Lectures for Abnormal Psychology to enlighten students about ICD (International Classification of Diseases).	Develop course modules to be made available to all UG students across departments to develop 21st century skills: 1. Social skills training 2. Communication skills 3. Personality development 4. Understanding "Self"	Encouraging student accountability – giving group projects, assigning goal- oriented tasks to help them learn planning and time management. Making the learning process reflective – keeping regular checks on themselves		Organize national and international conferences.

## <u>Ten-year plan</u>

- Facilitating online distance education by creating e-content videos for the national portal Swayam.
- Initiate a cell for combating sexual abuse, which rehabilitates survivors of abuse with counselling services.
- Establish MOUs with organizations that provides training related to psychological skills (such as assessment and interventions)
- Establish collaborations with organizations in the various fields of Psychology that provides internship opportunities for students.
- Establish Masters in Psychology.

-----

**DEPARTMENT OF LANGUAGES – FRENCH SHIFT 2** 

Plans for academic year 2021-26

- 1. Curriculum Planning Add on Certificate Courses German Foundation course
- 2. Teaching methodologies that includes ICT based teaching-learning process.
  - Usage of Projector during class
  - Component online for B.Com Honors students
  - Each unit as video that could be uploaded in Youtube
- Assessment and evaluation methods based on learning outcomes.
   Special coaching is given for the sports students and weak students
- 4. Department level linkages and partnerships with academic institutions and industry.
  - Liaison with AITF(Association of Indian Teachers of French)
- 5. Endowment lectures
  - In francophone literature
  - Quebec literature
  - French teaching methodology in indian context
  - Intercultural aspect of French and local languages
- 6. Conferences, workshops and FDP's.
  - To Workshops and seminars
  - To publish articles
- 7. Co-curricular and extra-curricular activities of the department etc.
  - Department Culturals
  - Tahifre Language cultural
  - Guest Lectures
- 8. Resource mobilization strategies.
  - To look for sponsors
  - To seek government scholarships and funds

# Plans for academic year 2021-31

 Curriculum Planning – Add on Certificate Courses German Foundation course
 Spanish Foundation and intermediate course

Spanish Foundation and intermediate course

- 10. Teaching methodologies that includes ICT based teaching-learning process.
  - Usage of Projector during class
  - Component online for B.Com Honors students
  - Each unit as video that could be uploaded in Youtube
- 11. Assessment and evaluation methods based on learning outcomes.

Special coaching is given for the sports students and for arrear students and weak students.

12. Department level linkages and partnerships with academic institutions and industry.

- Liaison with AITF(Association of Indian Teachers of French)
- International liaison with AIEQ (Association des études québécoises)

13. Endowment lectures

• In francophone literature

- Quebec literature
- French teaching methodology in indian context
- Intercultural aspect of French and local languages

14. Conferences, workshops and FDP's.

- To Workshops and seminars
- To publish articles
- International seminars

15. Co-curricular and extra-curricular activities of the department etc.

- Department Culturals
- Tahifre Language cultural
- Guest Lectures

16. Resource mobilization strategies.

- To look for sponsors
- To seek government scholarships and funds

# **DEPARTMENT OF LANGUAGES – HINDI SHIFT 2**

\_\_\_\_\_

## Five & Ten year plans for academic years 2021-26 & 2021-31

1. Curriculum Planning - Add on Certificate Courses

• Certificate course on -1. Creative Hindi Reading

2. Communicative Hindi

2. Teaching methodologies that includes ICT based teaching-learning process.

- Developing Video lectures of the lessons
- Projecting lessons through audio –visual tools

3. Assessment and evaluation methods based on learning outcomes.

- Seminars
- Creative writing tasks

4. Department level linkages and partnerships with academic institutions and industry.-Chennai based Newspaper industry

5. Endowment lectures- Intra relations of Indian languages

6. Conferences, workshops and FDP's.

- National Workshop for teachers on Manak Hindi
- InterNational seminar on Hindi literature during covid times
- FDP-On Body language

7. Projects and paper publications

• Applying for govt aided minor and major research projects

• research paper publication in UGC care journals

8. Co-curricular and extra-curricular activities of the department etc.

Co-curricular-

- Guest lectures
- seminars

Extra-curricular-

- Tahifre Inter departmental culturals
- Utkarsh intercollegiate competitions

9. Resource mobilization strategies.

- To get donations and sponsorship
- To apply for govt. funds

# PG & RESEARCH DEPARTMENT OF BIOTECHNOLOGY

# FIVE YEAR AND TEN-YEAR PLAN

The ultimate aim of the PG & Research Department of Biotechnology is to ensure that the Department is at the forefront in its' chosen fields. Research programmes would be taken up on a mission mode through appropriate structuring and orientation of available resources. Through the plans listed below, we believe would help us to head towards making the Department a Centre of Excellence in higher education which would encourage young women to adopt the newer methods of Science and Technology.

## **Five-Year Plans of the Department**

> Introduce B.Sc. Biotechnology, which will complete the Department as having UG, PG and Research programmes.

➤ Certificate /Diploma Courses

- Commence online courses for which students can register alongside their regular degree programme.
- Collaborate with renowned government and non-government institutions and organizations in offering Skill building and job oriented courses that could ignite the creative skills and innovative capabilities of students.
- Courses to be offered include Clinical Trials, Medical Laboratory Technology, Food Processing Technology and Bioinformatics.

Major and Minor Research Projects

- To further strengthen the infrastructure of the department efforts will be taken to apply for research proposals to government funding agencies. (UGC, CSIR, DBT, DST, TNSCST etc.)
- Endeavour to apply for extramural research through collaborative projects with suitable government and foreign universities. (Liverpool Hope University, UK)

➤ Research Guideship

• All the faculty members of the departments to become approved research guides to supervise doctoral research.

# **Ten-year plans of the Department**

Introduce new programmes

- ✓ B.Sc. Microbiology
- ✓ B.Voc Food Technology

# PG DEPARTMENT OF PHYSICS

#### Five-Year Plan (June 2021 – June 2026)

#### **Department Upgradation**

• Upgradation to a research department to offer Ph.D program and registration of faculty for Ph.D. guideship in the near future

## **Research lab upgradation**

• Equip the Materials Science research lab in the department with the next level of apparatus feasible to be procured.

#### **Research publications / Conference presentations**

- Department will publish minimum of 2 papers per year in internationally peer reviewed journals.
- Students doing M.Sc. projects will be motivated to do high quality research to enable them to present in conferences and publish in journals.

## **Research Funds**

- Make continuous efforts to submit research grant proposals to DST (SERB), United Board, TNSCST and other funding agencies
- Send Student proposals annually to TNSCST student's research grant scheme
- Make effective use of the Teacher's research grant and student seed grant offered by the Research cell of WCC.

## **Interdepartmental Research**

• Engage in multidisciplinary research with Chemistry and Biotechnology P.G. departments to work on interdisciplinary funded projects and guide M.Sc. students

# **Teaching methodologies**

- Strengthen ICT and internet facilities to aid classroom teaching and enable faculty to use power point presentations, online video demonstrations and virtual laboratory sessions.
- Classroom Teaching to be inclusive of Apps related to Physics and MOOC modules

## **E-resources**

• Prepare short interesting videos related to the curriculum by faculty and students and made available in Youtube

## **Courses for extra credits**

• Registration of students to Online courses in SWAYAM / NPTEL under the supervision of a mentor and make few students complete it definite every year for extra credits and certificate

## New courses

• Offer an NME on Environmental Physics to sensitize students on issues like sanitation/climatic changes/pollution/waste management/conservation of biological diversity/ electromagnetic radiation and its hazards / sustainable energy and use of Physics for environmental safety, agriculture, health care.

# **Guest lectures/Invited talks**

- Broaden the horizons of the existing annual lecture of the department and make it to be delivered by speakers drawn nationwide and from international institutes
- Open these lectures to students of other colleges as well.
- In continuation of the Webinar series on NET exam preparation techniques started in March 2021, this will be developed further by inviting eminent faculty as well as the alumna who have cleared NET.
- Arrange periodical lectures on psychology and mental health/personality development / entrepreneurship/ women health /higher education opportunities / Women and gender studies

# Workshops/FDPs/Training programs

Attempt to make maximum use of faculty and student potential for

- Introducing a weekly/monthly NET/SET/other competitive examinations training program for students of the department.
- Conduct faculty development programs in areas of expertise of the department faculty giving them scope to share their knowledge and serve as resource persons
- Collaborating with a college of education to organize a teacher's training workshop for Physics teachers of city colleges.

• Conducting regular Physics workshops (by students of the department) for school children.

#### **Certificate courses**

Offer certificate courses encompassing interdisciplinary fields and catering to the needs of department students, alumna, and other college students in the following topics

- Biophysics
- Problem solving in Physics
- Problem solving for NET examination.
- How to work on Material Science projects (Fast Track course)

#### Alumna liason

• Establish and encourage effective alumna participation in all activities of the department specifically in training programs, certificate courses and workshops in the capacity of participants and resource persons.

#### **Entrepreneurial activities**

- Strengthen the Green Box Initiative cell of the department where the students through their skill generate revenue through the sale of wooden articles (made in the college workshop) handmade artistic materials, stationery and food items.
- Explore further possibilities for the students to inculcate the Entrepreneurial Ability.

#### **Extension Activity**

Broaden the existent service related activities of reading and study material preparation to visually challenged students and teaching to underprivileged children in homes further by participatory activities like

• Serve as scribes to visually challenged students, conduct programs for children and women to teach arts/crafts/making jewellery/stitching so that they become self-supporting monetary wise.

#### Ten-Year Plan (June 2021 – June 2031)

#### 1. Conferences

- Conduct a conference once in three years
- Organizing an inter-disciplinary international conference, along with one or two other departments of the college.

## 2. Credit transfer

Look out for possibilities of students completing electives/skill based/NME courses through online MOOC modules/SWAYAM platform/COURSERA and thereby transfer credits.

#### **3.** International collaboration

Forge avenues with foreign institutes of higher learning for student internship and project openings, faculty research, faculty and students exchange programs.

# 4 Common Research facility/Research cluster

- Setting up a common research facility in WCC wherein research instruments procured will be used for interdisciplinary research among PG Sciences and can be shared by the three P.G. departments. (Physics/Biotech and Chemistry)
- Form Research clusters with few Physics departments of other colleges to do collaborative research by sharing the research apparatus available in each of the partnering departments.

# 5 MoU

- Partner with industries through MOU's for doing collaborative research, Student training and procuring industrial placements.
- Look out for avenues for Industry experts to teach a small percentage of the curriculum in some specific course.

# 6 Research and Consultancy

Establish linkages with institutions, after due permission from the Principal and drawing up well defined regulations to adhere to official protocols, to do collaborative research and offer consultancy services like

- Analyse /interpret research data collected by the partnering institutes or completing small assignments for them.
- Offer internship and projects options to students of other institutions
- Outsource the facility of the department Materials science research lab to few students from other colleges on a first come first serve basis at a nominal rate and thereby initiate revenue generation.

## 7. Course materials/book release

• Collate the extensive tailor made course material, worksheets, problem solving exercises and laboratory study material used by faculty for their classes and compile it as a department book and laboratory manual

## 8. Fund raising

- Facilitate one more graduation day prize
- Set up a department Corpus fund to provide monetary assistance to students from financially poor background for payment of fees and their study and to help students suffering from major ailments or lost their earning parent.

## 9 E-resources

• Every faculty to design one mooc module

## **10 Bridge Courses**

• Offer Bridge courses to first year students following admission into the PG programme in order to meet their various needs and bring them to a common platform as they come from diverse rural and urban backgrounds.

- Develop course material in Mathematical Physics/ fundamental concepts and Physics formulae by way of YouTube videos/Google quizzes and problem sheets
- Facilitate bilingual Bridge courses (English and Tamil; any other vernacular language if required)

# PG DEPARTMENT OF CHEMISTRY

#### Five years plan

- > To convert the Department into research Department.
- > To publish the inhouse student project work in Scopus indexed journals.
- To update the syllabus and introduce the recent advancements in the field of chemistry through new core electives.
- > To write minor research projects.
- To collaborate with National/International Universities/Institutions for internship and research activities.
- > To publish more research articles in Scopus-indexed journals.
- > To organize Seminars and conferences for the benefit of students.
- > To motivate the students to write NET/GATE/SLET examinations.
- > To generate more MOU/linkages with Industries and Research Institutions.
- > To offer at least one certificate course per year.
- > To introduce self-study/ learner designed courses.

#### Ten years plan

- ➤ To write major research projects.
- > MOU with International Universities.

**PG DEPARTMENT OF MATHEMATICS** 

#### **5** Year Plan of the Department

- Publications in UGC Care Journals
- Research Guideship for staff members
- Research Projects
- Sign MOU with industrialist
- Establish Research Centre for part time Ph. D Students
- > Research laboratories for Ph. D Students with Mathematical Software's
- Establish Research Department with full time Ph. D Scholars
- Monthly News Letter for the Department
- > Yearly Magazine for the Department achievement and activities
- Introduce interdisciplinary courses
- Students to take up in-house projects with seed grant
- Staff to take up in-house research projects with seed grant
- > Organize certificate courses for Quantitative Aptitudes and Logical Reasoning

- > Organize certificate course for Mathematical Soft Tools
- > Organize certificate course for competitive exams such as NET, SLET, GATE

#### **10 Year Plan of the Department**

- Establish the PG Department to a Research Department
- Organize Conferences
- Mathematics Laboratory
- Students to take up inter- department research.

MA COMMUNICATION ACTION PLAN

## FIVE-YEAR ACTION PLAN

Within the timeframe of the next 5 years the postgraduate department of Communication aims at accomplishing the following-

- To present and publish more papers in UGC approved journals
- To introduce a new paper titled 'Writing for Media'
- To introduce a new course on Critical Media Studies
- To introduce certificate courses on Digital Media, Editing and Design to the students of WCC
- To undertake small projects benefiting the local community to impart knowledge and create awareness about various socio-economic issues
- To organise workshops related to fact-checking, disinformation and misinformation among various segments of the society
- To bring the alumna of the Department to address the students
- To start a Film Club involving the students of WCC
- To make the social media handles of the Department active

## **TEN-YEAR ACTION PLAN**

Within the timeframe of the next 10 years the postgraduate department of Communication aims at accomplishing the following-

- To transform into a research department and to make sure all the faculties have a Doctorate
- To work on projects with United Board, ICSSR and UGC
- To have a state of the art studio setup and editing software for Television and Radio Production, Photography and other related courses
- To extend the offering of certificate courses to students from other colleges
- To explore the possibility of having more MOUs with several media houses from across the country

-----