



## **DETAILED CONSULTANCY BROCHURE - 2020**

# **UNIVERSITY OF KERALA**

Re-Accredited with 'A' Grade by NAAC





**University Consultancy Cell  
(UCC)**

**University of Kerala  
2020**

# **University Consultancy Cell**

- (i) *The Vice-Chancellor (Chairman)*
- (ii) *The Pro-Vice-Chancellor*
- (iii) *One Syndicate member nominated by the VC*
- (iv) *The Registrar*
- (v) *The Finance Officer*
- (vi) *The Director (Planning & Development)*
- (vii) *The Director of Research*
- (viii) *The Director of IQAC*
- (ix) – (xi) *Three Heads of the University Teaching Depts, nominated by the VC*
- (xii) *One Senior Professor, nominated by the VC.*

---

## **CONTACT DETAILS**

*For all consultancy enquiries, please mail or write to:*

**Prof. Dr. Sabu Joseph, UCC**

*Professor, Dept. of Environmental Sciences,  
University of Kerala, Karyavattom Campus  
Thiruvananthapuram 695581*

**Email: [jsabu@keralauniversity.ac.in](mailto:jsabu@keralauniversity.ac.in)**

**[ucc.keralauniversity@gmail.com](mailto:ucc.keralauniversity@gmail.com)**

**Tel (O): 0471-2308146; Mob:9447453063**

This document is produced by the IQAC for providing information to potential consultancy clients and is for private circulation only

**© University of Kerala 2020**

## About the University of Kerala and its Consultancy Service Scheme

One of the first 16 Universities in India, the University of Kerala was founded as the University of Travancore in 1937. During the 7 decade since, the University of Kerala grew and shrunk physically and transformed itself in many ways. The earliest origins of the University may be traced back to two institutions of modern learning in Kerala, the University College, Thiruvananthapuram and the Trivandrum Observatory (The Trivandrum Observatory was founded in 1838 and had an internationally reputed scientist, JohnCaldecott FRS as its first Director - it is now the oldest institution under the Kerala University). In 2015, the University of Kerala was re-accredited with 'A' Grade by National Assessment and Accreditation Council(NAAC). Ranked 23<sup>rd</sup> (NIRF, 2020) among universities in India.

At present, the University has sixteen faculties (subject groups) and forty three departments of teaching and research in addition to study centres and other Departments. The Departments are:

**Science & Technology Departments:** Opto-electronics, Computer Science, Computational Biology & Bioinformatics, Futures Studies, Physics, Chemistry, Botany, Zoology, Biochemistry, Biotechnology, Aquatic Biology & Fisheries, Environmental Sciences, Geology, Psychology, Mathematics, Statistics, Demography, NanoScience and Nanotechnology.

**Social Sciences Departments:** Sociology, Political Science, Economics, History, Archaeology, Islamic Studies, Commerce, Managment, Education, Law, Library and Information Sciences, Philosophy.

**Arts and Humanities Departments:** English, Russian, German, Arabic, Malayalam, Hindi, Sanskrit, Tamil, Linguistics, Oriental Research, Communication and Journalism, Music, Kerala studies.

It has about 200 full-time faculty members working in these Departments, most of whom are PhD holders. Technical officers and research fellows are also in service. Teaching, research and knowledge extension are the mandates of the Departments. They primarily focus on post- graduate (masters) programmes, M.Phil programmes (1-year research degree) and doctoral research. The University Departments are mostly situated in the sprawling green campus in Karyavattom, adjacent to Technopark. The University has been publishing the Journal of Indian History, a prominent publication in the area since 1946. The Manuscript Library of the University is a treasure trove of Indian culture. The library has over 65,000 works in 30,000 copies mainly of palm leaf manuscripts, in addition to paper manuscripts, copper plates, birch bark etc. The University Library has a collection of 3.5 lakhs books and the Department librariesanother 5 lakhs. The campus is wi-fi enabled. A Centralised laboratory for instrumentation and facilitation (CLIF) in addition to a central computing facility serves the whole university research.

All faculty members are encouraged to take up consultancy services individually or as Departmental work. The University has a scheme to enable its special infrastructure and expertise of its faculty and technical staff to offer specialized consultancy services to individuals and organizations. When the consultancy service does not involve use of University facilities, it is considered **as individual consultancy** and otherwise, **institutional consultancy**. A “University consultancy Cell” (UCC) chaired by the Vice-Chancellor processes all consultancy projects and the co-ordinator of the UCC is empowered to receive all approved consultancy funds and provide it to the consultant, cutting the red tape. All consultancy services are charged service tax (presently 18%).

As the University of Kerala is a multidisciplinary University with Depts. specializing in 43 subjects, it is able to offer a wide range of consultancy services, from plant identification to Arabic translation, from software development to social surveys, from medical image analysis to water testing. Recently, the University has set up a sophisticated Instrumentation Faculty enhancing its services further. In addition to professional consultancy, the University Depts. also welcome academic consultancy in the form of student projects etc. subject to its own requirements for serving its full time students.

The University welcomes enquiries for consultancy services.

## **Recent Consultancy Clients**

FHI-UK  
Reliance  
MGNRGEP  
World Bank  
Federal Bank  
Kannur University Chibro Aqua, Israel  
State Resource Centre Kerala  
Water Authority  
Microsoft India Pvt. Ltd.  
Asian Development Bank Trivandrum Corporation  
Motor Vehicles Department  
Biothera Health Care Group  
VP Fibro Aquaculture, Israel  
Kerala State Planning Board  
Election Commission of India  
Kerala State Electricity Board  
Kerala State Biodiversity Board  
Kerala State Revenue Department  
Federal Manipal School of Banking  
Kerala State Ministry of Agriculture  
Gulati Institute of Finance and Taxation  
Japan Bank for International Cooperation  
Kerala Sustainable Urban Development Project  
Centre for the Study of Developing Societies, New Delhi  
Israel Agency for Development of Aquaculture in Kerala  
KOFFOLK Limited, Israel  
Adani Vizhinjam Port Pvt Ltd

# UNIVERSITY OF KERALA

## **SCIENCE & TECHNOLOGY DEPARTMENTS**

AQUATIC BIOLOGY & FISHERIES, BIOCHEMISTRY, BIOTECHNOLOGY, BOTANY, CHEMISTRY, COMPUTATIONAL BIOLOGY & BIOINFORMATICS, COMPUTER SCIENCE, DEMOGRAPHY, ENVIRONMENTAL SCIENCES, FUTURE STUDIES, GEOLOGY, MATHEMATICS, NANOSCIENCE & NANOTECHNOLOGY, OPTO-ELECTRONICS, PHYSICS, PSYCHOLOGY, STATISTICS, ZOOLOGY.

## **SOCIAL SCIENCES DEPARTMENTS**

ARCHAEOLOGY, COMMERCE, ECONOMICS, EDUCATION, HISTORY, ISLAMIC STUDIES, LAW, LIBRARY & INFORMATION SCIENCES, MANAGEMENT, PHILOSOPHY, POLITICAL SCIENCE, SOCIOLOGY

## **ARTS & HUMANITIES DEPARTMENTS**

ARABIC, COMMUNICATION & JOURNALISM, ENGLISH, GERMAN, HINDI, LINGUISTICS, MALAYALAM, MUSIC, ORIENTAL RESEARCH, RUSSIAN, SANSKRIT, TAMIL, KERALA STUDIES.

**SCIENCE & TECHNOLOGY DEPARTMENTS**  
**UNIVERSITY OF KERALA**



# Centralized Laboratory for Instrumentation and Facilitation (CLIF)

The Request forms for analysis and Analysis cost and other details can be at [www.kusicc.ac.in](http://www.kusicc.ac.in)

Mail id: [siccuok@gmail.com](mailto:siccuok@gmail.com)

## LIST OF EQUIPMENTS IN CLIF, UNIVERSITY OF KERALA

Sl.No	Instrument Name	Purpose
1	Inductively Coupled Plasma Mass Spectrometer (ICP-MS)	Used for elemental analysis.
2	X-Ray Diffractometer (XRD)	X-ray diffraction (XRD) is a rapid analytical technique primarily used for phase identification of a crystalline material and can provide information on unit cell dimensions. X-ray diffraction is most widely used for the identification of unknown crystalline materials (e.g. minerals, inorganic compounds).
3	Atomic Force Microscope (AFM/SPM)	Used to study the atomic level topography; of materials with high resolution and 319 structure of the materials.
4	Spectral Confocal Microscope (SCM)	It is an optical imaging technique for increasing optical resolution and contrast of a micrograph by means of using a spatial pinhole to block out-of-focus light in image formation.
5	UV-Visible Spectrophotometer	UV/VIS/NIR spectroscopy is a powerful analytical technique to determine the optical properties such as transmittance, reflectance and absorbance of solid samples operates in the optical range between 200 nm to 3000 nm.
6	FT-IR Spectrometer	Fourier Transform Infrared Spectroscopy (FT-IR) is one of the techniques to measure the intensity of IR radiation, caused by vibration of functional groups present in the molecule expressed as a function of frequency in a range of 400-4000 $\text{cm}^{-1}$
7	Scanning Electron Microscope (SEM/EDS)	Used to study the surface morphology (113 micron and nano size) of the materials like metallic, non metallic, biological, etc; using electrons.
8	NMR Spectrometer	Used in Quality Control and Research For determining the content and Purity of a Sample as well as its molecular structure.
9	CHN(S) Analyser	CHNS Analyser provide a means for the determination of Percentage Elemental composition of Carbon, Hydrogen, Nitrogen and Sulphur in organic matrices and are capable of handling a wide variety of sample types including solids, liquids and viscous samples

10	TGDTA/DSC System	STA 8000 enables real-time measurement and analysis of sample weight change and heat flow in one compact lab instrument which is useful for determining sample decomposition, mass loss percentage, energy absorbed or released from a sample as a function of time or a temperature profile.
11	DNA Sequencer	DNA sequencer or Genetic analyser is a machine which uses for sequencing (determining or identifying) the order of nucleotide present in a DNA sequence.
12	X-Ray Photoelectron Spectrometer (XPS)	X-ray photoelectron spectroscopy (XPS) is a surface-sensitive quantitative spectroscopic technique that is used for the investigation of the chemical state, elemental composition of materials such as inorganic, organic, polymeric, nanocomposites etc..
13	Liquid Nitrogen Plant	For the production of Liquid Nitrogen
14	Liquid Chromatography Mass Spectrometer (LC-MS)	Widely used for compound separation and structural analysis of targeted and untargeted molecules from various sample (Herbal, Pesticide, Drugs etc.)
15	High-performance thin-layer Chromatography (HPTLC)	Used for the separation of class of compounds.
16	Sophisticated Fluorescence Spectrometer	The FLS1000 from Edinburgh Instruments is a modular fluorescence and phosphorescence spectrometer for measuring spectra from the ultraviolet to the mid-infrared spectral range (up to 5,500 nm), and lifetimes spanning from picoseconds to seconds. Main applications in Photophysics, Photochemistry, Material Sciences and Life Sciences.
17	Centrifuge	For the separation of cellular organelles or macro molecules

The Request forms for analysis and Analysis cost and other details can be at [www.kusicc.ac.in](http://www.kusicc.ac.in)  
Contact email: [siccuok@gmail.com](mailto:siccuok@gmail.com)

## 1. Campus Computing Facility at CLIF

The Campus Computing Facility is a dedicated Central Computing Facility under the DST Purse Programme, which enables faculty and students to use computational methods in their research. The Linux cluster at CCF is dedicated for the researchers to enable the next generation of computational scientists to make full use of this important technology. For easy access and better utilization of these facilities, a series of training programmes and workshop are conducted on various aspects of scientific computing. CCF has 50 Desktop computers and a High performance computing cluster which has 10 nodes: - a master node with 24GB of RAM and nine compute nodes with 8 GB RAM each. Each node is a dual six-core Intel®XeonE5645 series 2.40GHz rack server. The softwares installed in CCF for the utilization of researchers and faculties are as follows:

### Chemistry related softwares

- Turbomole 6.4 for quantum chemical application
- NWChem 6.0 ab initio computational chemistry software
- Tinker 6.1 molecular modeling package (molecular mechanics and dynamics)
- GROMACS (GROningenMACHine for Chemical Simulations) molecular dynamics package for simulations of proteins, lipids and nucleic acids.
- VMD

### Bio-informatics applications

- HMMER
- NCBI BLAST, MpiBLAST
- Biopython
- ClustalW
- MrBayes
- T\_Coffee
- Emboss
- Phylip
- Fasta
- Glimmer
- perl-bioperl

### Parallel computing MPI libraries

- OpenMPI; MPICH

### Compilers

- C/C++
- FORTRAN
- Perl
- Python 2.7 and ipython 0.10 interactive shell for python programming

### Statistical Analysis

- IBM SPSS20
- pspp0.6.2

### Remote Access and Virtual Desktop

- FreeNx for ssh based remotelgin
- OpenSSH

### **Statistical computing and Graphics**

- R 2.15.2 for Statistical computing and Graphics
- Gnuplot 4.2.6 for 2D and 3D plots
- python–matplotlib 0.99 2D plotting library

### **Mathematical and Numerical Computation**

- Blas 3.2, Atlas 3.8, Goto Blas2, Openblas linear algebra library
- Scilab 5.4.0 for numerical computation
- scipy 0.7.2 and numpy 1.4.1 mathematical and scientific computing library
- Matlab 2012

### **Job Queueing system**

- SGE 6.2 Sun Grid Engine (Open Grid Scheduler)
- Condor High Throughput Computing environment

### **Cluster monitoring system**

- Ganglia

### **Web server**

- Apache

### **Computing Facilities extended currently:**

(i) **Computational Chemistry:** HPC facility is used mainly to run job using NWChem program. It has been used in connection with certain projects that have got biochemical significance. Density functional theory calculations were employed to quantify the effect of hydrogen bonding interactions in the nucleophilic exchange reactions involving cystines and selenocystines.

(ii) **Membrane dynamics:** Modelling biological system behaviour is a significant task of systems biology and mathematical biology. Computing systems biology, aims to develop and use efficient algorithms, data structures, visualization and communication tools with the goal of computer modelling of biological systems. Currently the dynamical and configurational properties of lipid bilayer membrane is analysed computationally using molecular dynamics (MD) simulations which computationally prohibitive to carry out its long term behaviour.

(iii) **Social Network Analysis:** Social network analysis [SNA] is the mapping and measuring of relationships and flows between people, groups, organizations, computers, URLs, and other connected information/knowledge entities. The nodes in the network are the people and groups while the links show relationships or flows between the nodes. SNA provides both a visual and a mathematical analysis of human relationships. Management consultants use this methodology with their business clients and call it Organizational Network Analysis [ONA]. Some of the researchers here are utilizing the computing facilities of the centre to study Indian Railway network, Citation networks, road network etc.

(iv) **Opinion mining and sentimental analysis:** Opinion mining or sentimental analysis often refers to process of deriving subjective information such as sentiments of the writer from written material using computing tools using natural language processing etc. This has become increasingly relevant in the current scenario where users of product write their opinion about product on online forums such as twitter which is very large in size so that one cannot go and read everything. Currently CCF is providing computing assistance to a study to develop sentimental analysis tools to analysis large volume of twitter data on specific commercial product.

**(v) Wind modelling and forecasting:** Surface wind plays a crucial role in the climate and the weather system of the earth. Wind speed modelling and forecasting is an important aspect of wind power generation – yet one of the most difficult due to the myriad factors affecting it and over the years many tools have been developed for this purpose. One the research group here is trying understand better the underlying dynamics wind speed fluctuations and develop better computing tools capable of predicting accurate short term behaviour.

**(vi) Bio-informatics:** Clusters could potentially be useful for deriving desired information from the raw data, as well as to use algorithms interpreting huge data, within a short time span. The cluster computing facility at CCF has been used for bio-sequence compression based on a parallel pattern recognition. The sequence alignment research works needs to handle large sequence of data (30GB).

## **I. Department of Aquatic Biology & Fisheries**

One of the oldest teaching-cum-research Departments of the University of Kerala and Centre of Advanced Study of University Grants Commission, India, Dept. of Aquatic Biology & Fisheries has completed 82 years of its existence in 2020. This Department has a Centre for Aquaculture Research and Extension (CARE) and has expertise in the topics of Aquatic Ecology, Restoration Ecology, Taxonomy, DNA barcoding, Biodiversity Conservation and Documentation, Fresh and Brackish water Aquaculture, Management of Home and Public Aquariums, Ornamental Fish Culture and Breeding, Seed Production Shrimps and Ornamental Fish, Fisheries Extension, Fish Pathology and Aquatic Pollution and Toxicology, and played a major role in human resource development in the fields of Aquatic Biology and Fisheries.

### **Consultancy/training offered:**

- Freshwater and Brackish water Aquaculture: Training and Consultancy
- Seed production of shrimps and fish: Training and Consultancy
- Culture of crabs: Consultancy
- Ornamental fish breeding, Aquarium Keeping and Maintenance: Training and Consultancy
- Public Aquarium: Training and Consultancy
- Aquaponics and bio floc systems: Training and consultancy
- Aquatic Taxonomy: Taxonomic identification and DNA barcoding of aquatic organisms with special reference to Crustacea, Mollusca, Echinodermata, Fish, Pelagic Birds, Reptiles and Marine Mammals: Training and Consultancy.
- Microalgal culture: Training and Consultancy
- Water Quality Monitoring of inland water bodies: Consultancy
- Fish Census in inland water bodies: Training and Consultancy
- Environmental Impact Assessment: Aquatic Ecosystems: Consultancy
- Policy documents on conservation and biodiversity: Consultancy

Consultancy done with clients like Agency for Development of Aquaculture in Kerala(ADAK); KOFFOLK Limited, Israel; ADANI VIZHINJAM PORT PVT LTD etc.

## II. Department of Biochemistry

The Department of Biochemistry was established in 1970 and offers MSc Biochemistry, MPhil Biochemistry, MPhil Genetics and Genomics and PhD programmes. Thrust areas of research include atherosclerosis, diabetes, cell biology, nanobiology, structural biology, inflammation, arthritis, cancer research, epigenetics and tissue engineering. The department has generated lot of funds during the period 2008-2015 with an external funding of 3.81crores and university funding of 1.85 crores. The department was funded by UGC-SAP DRS Phase II Programme of 72 lakhs and DST-FIST Programme of 62 lakhs. Other ongoing projects include BSR-Start up grants and major projects funded by UGC, DST, KSCSTE etc. The department has produced more than 250 PhD's with more than 800 publications in international, indexed journals. The average impact factor for publications during the period, 2008-2014 is 2.6.

**Consultancy Areas:** Screening of hepatitis/rheumatoid arthritis/lifestyle diseases etc.

- Healthy diet formulation.
- Nutritional supplements in health and disease.
- Antioxidant and anti-inflammatory screening
- LOX, COX, lipid mediators, cytokines by ELISA
- Rheumatoid Arthritis Factor(RAF)
- C - Reactive Protein(CRP)
- Cyclic Citrullinated Peptide Antibody(CCP)
- Lipid Profile (Total cholesterol, HDL, LDL,VLDL cholesterol and Triglycerides)
- Blood Glucose (Fasting, Post prandial, Random)
- Glycated hemoglobin (HbA1C)
- Blood grouping (ABO grouping)
- Hepatitis B Screening
- Biochemical testing- for metabolic disorders and lifestyle diseases.
- Evaluation of anti-microbial agents
- Training for undergraduate, postgraduate students and research scholars
- Molecular Biology techniques
- Cell Culture Techniques
- Microbiology Techniques

### **III. Department of Biotechnology**

The University Department of Biotechnology was established in 1995. It offers postgraduate Degree and Doctoral Degree in Biotechnology. The department is engaged on both basic and applied aspects of Biotechnology Research. The Department has established and Inter University Centre for Genomics and Gene Technology, an initiative of the Department of Higher Education, Govt. of Kerala. We impart training on various fields of Biotechnology to the needy person according to their research and academic needs.

**Major Facilities available:** Animal Cell Culture Facility- Carbon Dioxide Incubator, Inverted Microscope, Inverted Fluorescent Microscope Fermenter.; Molecular Biology/ Biochemistry-Microbiology: Refrigerated centrifuges, Refrigerated Micro centrifuge, Protein Gel Electrophoresis ,Iso-electric Focusing (IEF),2D Gel Electrophoresis, DNA Electrophoresis, Gel documentation system, Liquid Chromatography with fraction collector, Fast Performance Liquid Chromatography, Laboratory Fermenter/Bioreactor, ELISA Reader, UV-Vis Spectrophotometer, Speed Vac Concentrator, Cryocan for Liquid Nitrogen , HPLC for purification of organic compounds, PCR and RT PCR, Facility for large scale cultivation of animal cellcultures.

#### **Consultancy Areas:**

- Microbial analysis of drinking water and Food materials: Microbial quality analysis of drinking water and food materials. Also we conduct short term training in microbial analysis as well as in other related biotechnological and biochemical techniques
- Screening and Evaluation of Bioactivity of synthetic chemicals and natural compounds.
- Animal cell culture based screening and evaluation of synthetic and natural compounds will carried out on request or based collaborative or mutual understanding
- Short term training on Molecular, immunological, animal Cell culture and Microbial techniques.
- The department also undertakes project training of students – PG, M. Phil and PhD students from other departments, colleges and Institutes.



## IV. Department of Botany

Department of Botany, University of Kerala, was established in the year 1959 by Late Prof. (Dr.) A. Abraham. The Department actively serves the society through dissemination of knowledge and training the younger generation through unique courses and offering training in frontier areas of Plant Sciences. The Department is known internationally for its major contributions in Cytogenetics and Cytotaxonomy and for running a novel postgraduate programme on Genetics and Plant Breeding. Recently the Department has initiated another post graduate programme in Biodiversity Conservation. The Department is also active in research areas such as Plant cell/tissue culture, Molecular Biology, Phytochemistry, Plant Systematics, Plant reproductive biology and Biodiversity Conservation. The Department has technical expertise in diverse areas and is capable of providing consultancy services in the following areas

### Instruments useful for consultancy

Sl. No.	Name of equipment	Consultancy possibilities
1.	Stereomicroscope	To capture stereo image of the specimens- floral details, epidermal hairs, magnified view of insects etc.
2.	Image Analyzer	To take the photomicrographs of cells, chromosomes and pollen grains after adopting specific preparation methods
3.	Fluorescence microscope	Determination of cell viability and to capture images of fluoresced samples
4.	Phase contrast microscope	To capture image of live specimen and also fluorescence imaging like pollen / cell viability examinations
5.	Vacuum filtration unit	Rapid filtration of samples under vacuum pressure
6.	Soxhlet apparatus and Clevenger apparatus	Preparation of crude extracts using different solvents and volatile oils from medicinal plants(natural dyes, essential oils, saponins and alkaloids)
7.	Rotary evaporator	Removal of solvents and concentrating plant extracts
8.	Lyophilizer	Freeze drying of phytochemical extracts
9.	UV-VIS Spectrophotometer	Quantification of different phytochemicals
10.	HPLC unit	Quantification of phytochemicals using pure standard as reference. Quantification of- anthraquinone constituents, camptothecin, lawsone etc...
11.	Gas chromatography unit	Quantification of volatile compounds using pure standards as

		reference. e.g., essential oils
12.	Gel electrophoresis (Vertical and Horizontal Units)	Separation of DNA, Protein samples, Molecular marker analysis, Isozyme studies, SDS-PAGE analysis
13.	Gel documentation	To capture images of eletrophretic gels and analysis
14.	PCR units	DNA amplification as part of molecular marker studies, specific amplifications etc.
15.	RT-PCR	Used in the estimation of transcription of specific genes and disease diagnosis
16.	Biophotometer	Quantification of DNA, RNA and protein
17.	Nanophotometer	Quantification and characterization of DNA, RNA and protein samples
18.	MVSP software	UPGMA cluster analysis of morphological and molecular data in the diversity analysis studies

#### Technical expertise domain areas

- Identification of Plants and Certification
- Assistance in Herbarium preparation methods and opportunity to visualize the digitized Herbarium in the Department for identifying plant specimens
- Biodiversity analysis as part of Environmental Impact Analysis (EIA)
- Online training in horticulture methods and hands on training in flower arrangement (Fresh and dry flower arrangements): also short term training and supply as per the order
- Provide help in setting up small lawn gardens and indoor gardens for offices and houses.
- Training on nursery practices and consultancy on maintenance of homegardens
- Assistance in design and development of other specialized planting systems as Terrarium and Kokedama
- Assistance in the digital documentation of the localized biodiversity.
- Training and consultancy on seed collection, storage, viability tests, germination, handling recalcitrant seeds, traditional seed storage practices, and embryo rescue techniques
- Training plant breeding enthusiasts in the practice of plant vegetative propagation methods artificial pollination and hybridization techniques
- Conducting projects (one-three month) for Graduate, Post graduate students on following disciplines; plant tissue culture, Genetic diversity analysis, Phytochemical profiling, Seed science, Reproductive biology
- Scientific validation of herbal products or plant extracts from plants with ethno medicinal importance.
- Construction of cost effective manner tissue culture labs and short term (both online or conventional) training on plant tissue culture and hardening methods

- Setting up an advanced tissue culture laboratory and propagation of banana, medicinal herbs, ornamentals such as orchids, carnations etc.
- *In vitro* floral bouquet development and maintenance for small-scale entrepreneurs
- Demonstration classes for the working of Bioreactor
- Cell culture based metabolite production such as anthraquinones and saponins
- Demonstration on Green extraction methods for Phytochemical analysis – Qualitative and Quantitative methods
- Conducting bioactivity studies (Antimicrobial, antioxidant activity tests) for herbal extracts
- Nitrogen, protein analysis- plant, animal, drug samples based on Dumas' method
- Provide training to make the best use of waste materials around us.

**Key words**

Plant identification, Herbarium Techniques, Phytochemical analysis, Validation of herbal products, Bioactivity study, Cell/tissue culture and micropropagation, *In vitro* metabolite production, Scientific projects, Biodiversity assessment, Flower arrangement, Seed bank, In door and outdoor garden setting

Total amount generated from consultancy year wise during the last five years

Year	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
<b>INR</b>		<b>340</b>	<b>250</b>	<b>6540</b>	<b>6962</b>	<b>6254</b>

## V. Department of Chemistry

The Department was established in 1937 and offers M.Sc., M.Phil. and Ph.D programmes. The Department focuses research on the following areas: Development of Nano material coating for medical applications; Development of functional micro porous polymers; Development of functional nano materials; Computational Chemistry; Synthetic organic chemistry; Hydrogen energy; Microbial fuel cells, photocatalytic hydrogen generation, Sacrificial anode; Hot dip coating and Industrial metal finishing. The Department has many patents and very recently it has filed two patents one on 'development of orthodontic coating for medical application' and the other on 'development of sacrificial anode. The Department plans to file three more patents soon, one on 'hard metal coating', one on 'Electrocatalytic cathode for hydrogen generation' and the other on 'development of composite hot dip galvanic coating for protection of steel'.

### **Consultancy Areas:**

- Development of hot dip galvanic coating for protection of steel
- Development of sacrificial anodes for protection of steel
- Development of industrial hard metal coating,
- Hard-soft metallic coating for specific applications (e.g. for air craft landing gear)
- Development of catalytic electrodes as sensors or for electrochemical reactors
- Development of electrochemical hydrogen generator
- Development of suitable orthopaedic / orthodontic coating
- Development of light metal alloys for corrosion tolerance
- Testing of hydrogen
- Testing of by AAS, HPLC, IR, UV, Spectrofluorometer, DLS
- Support for spectral data analysis for organic structure elucidation
- Support for 'computational chemistry' / 'molecular orbital theory calculations'.

## **VI. Dept. of Computational Biology & Bioinformatics**

Department of Computation Biology & Bioinformatics, established originally as Centre for Bioinformatics in 2005, is an inter-disciplinary Department with a community of researchers, teachers, and students from a variety of backgrounds including computer science, engineering, mathematics, molecular biology, chemistry, bio-technology etc. Within the short span of existence, the Department has made modest and steady progress in teaching, research, scholarly publishing and contribution to international bio-databases and development of software tools in bioinformatics.

Facilities include Informatics Lab, Drug discovery Lab, Basic Molecular Biology lab and Bio-electronics Lab.

Recent consultancy clients for the department include: Microsoft India Pvt. Ltd, Biothera Health Care Group and Kerala State Biodiversity Board. The Department has M.O.U.s with C-DAC, Sci Genom Pvt. Ltd. and Govt. Ayurveda College, Trivandrum.

### **Consultancy Areas:**

#### **Technical:**

- Developing Soft Computing tools for Bio-sequence Analysis
- Big Dataanalytics
- NGS dataanalysis
- Phylogeneticanalysis
- MolecularModeling
- Computational Drug Design
- Cytotoxicity testing using in-vitro cellculture
- PCR &Primerdesigning
- Molecularcloning
- Blottingtechniques

#### **Pedagogic:**

- PedagogyworkshopsincludingResearchMethodologyand“LearningtoLearn”
- Preparation of Research/Funding proposals
- Organizing workshops on NGS, Perl, Python, R and Big data Analysis, Scilab and Bioinformatics tools.

## **VII. Department of Computer Science**

The Department of Computer Science was established in 1985 and has generated a strong Post Graduate culture in Computer Science studies. The Department is running the following teaching programmes - M.Sc. in Computer Science., M.Sc. Computer Science with specialization in Artificial Intelligence (2020 Onwards), AICTE approved M. Tech. Computer Science (With specialization in Digital Image Computing)., M. Phil. Computer Science (With specialization in Machine Learning) and as well as research leading to Ph.D. Degree in Computer Science. The Research programmes of the Department have borne fruit through 41 Ph. Ds produced by it.

The department has successfully running a Centre of Data Science and Information Processing and newly sanctioned Centre for Artificial Intelligence and Research is associated with it. Our Department has a Start up run by the alumnus of our department from 2019 onwards for software and research support.

### **Consultancy Areas:**

- Medical Image Analysis
- Artificial Intelligence and Machine Learning
- Software Development and Automation
- Cyber Security
- Satellite Image Analysis
- Database Optimization
- Text Analytics
- Speech Processing
- Plant disease detection and analysis
- Data Mining and Analytics
- Design and development of mobile applications
- Software solutions for embedded systems
- Data Analytics
- Digital Image Processing
- Computer Vision

## **VIII. Department of Demography**

The Department of Demography was started in the year 1979 and is currently offering M.Sc and M.Phil courses in Demography and Actuarial Science and PhD programme in demography. The department has taken up various research projects on a variety of topics including Demography, public health, reproductive and child health, population ageing, migration, etc. The Department also has been taking up consultancy services from various sources. 'Workstation for Research on Microdata from Census', setup at the Department of Demography with support from Registrar General and Census Commissioner, Government of India, has all the data pertaining to Census of India since 1961.

### **Consultancy Areas:**

- Data analysis of Census Data
- Demography and population issues
- Survey design, planning and implementation
- Monitoring and evaluation of health and social sector programmes
- Reproductive and child health issues
- Migration and its impact on society
- Data collection through interviewing individuals and functionaries
- Data processing
- Data analysis using advanced statistical tools
- Data analysis using SPSS, STATA and other software packages
- Data analysis and report preparation
- Training on various topics including population issues, research methods, ethics in research, scientific writing, data sources

## **IX. Department of Environmental Sciences**

The Dept. of Environmental Sciences, under the Faculty of Applied Sciences and Technology, is a multidisciplinary teaching-cum-research department established in 1995. It offers M.Sc., M.Phil., Ph.D and Post doctoral programmes in Environmental Sciences. The department has facilities for undertaking research work in Env. Biology, Env. Microbiology, Env. Chemistry, Env. Toxicology and Env. Geology. The department has made significant contributions through several major research projects funded by UGC, MoEF, DST, BRNS, DBT, KSCSTE, CPCB, Govt. of Kerala and DoECC. Also has collaborations with national and international institutions/ agencies in the form of joint research projects and academic exchanges. Water Testing Laboratory with approved license by Kerala State Pollution Control Board is a hallmark of the department.

### **Special Instrument Facility:**

BOD Incubator, Flame Photometer, High Performance Liquid Chromatography(HPLC), Gas Chromatography, AAS, RAD7 Radon detector (Durrige Co., USA).

### **Consultancy Areas:**

- Water testing facility for drinking water for public and private sectors on payment basis in the Pollution Control Board approved lab of department. For details of analysis and Rates of analysis visit university web site ([www.keralauniversity.ac.in/dept/env/science/consultancy](http://www.keralauniversity.ac.in/dept/env/science/consultancy)).
- Water resource management, surface water-ground water interaction studies using isotopic techniques
- Consultancy for rainwater harvesting and artificial recharge
- EIA studies for developmental projects – preparation of TOR, EMP and EIS
- River bank mapping and sand auditing of rivers
- Solid waste management of proposed sites
- Environmental auditing (waste-, water- and energy- auditing)
- GIS analysis and mapping



## **X. Department of Future Studies**

The areas of domain expertise of Dept of Futures Studies are given below.

1. Large scale surveys (social, medical and health)
2. Psephological studies
3. Environmental impact studies
4. Large scale cadastral mapping exercise
5. Resource mapping
6. Digital image processing using specialised software
7. Geographic information systems (GIS)
8. Data modelling and management
9. Computer modelling and simulations
10. Complex network analysis

The domain areas of technical expertise of the Department of Demography are

1. Demographic analysis
2. Analysis of Census Data
3. Survey design, planning and implementation
4. Monitoring and evaluation of health and social sector programmes
5. Data collection, processing, analysis and report preparation on various social issues
6. Technical support on Reproductive and child health issues and Migration and its impact on society
7. Training on various topics including population issues, research methods, ethics in research, scientific writing, data sources

## **XI. Department of Geology**

The Department of Geology is well-known for its hoary traditions, up to date curriculum, consistently high academic performance, and field oriented studies. It has state-of-the-art laboratories and one of the best geology libraries in the state that can cater a plethora of geoscience issues. This department, with seven faculty members and one Emeritus fellow, specializes from pure geology to applied geology as well as environmental sciences to climate change.

**Analytical capabilities:** Resistivity Meter, Infiltrometer, • Remote sensing data products, Proprietary and FOSS GIS labs; • Atomic Absorption Spectrometer (AAS) for elemental analyses of various media. • UV VIS spectrometer; • Fume hood with HF – HNO<sub>3</sub> based digestion and solution preparation of rocks, minerals and refractories – well equipped chemical lab to analyze rock and water samples – material characterization.

- Mineral and rock identification, geological mapping and training for geological mapping, geochemical studies
- Resistivity survey (geophysical) for identification of sub surface lithology and fractures
- Geological mapping, reserve estimation of ores
- Thin section preparation
- Water resource management, locating bore wells and dugwells
- Consultancy for rainwater harvesting and artificial recharge.
- Preparation of village wise water security plan and solving drinking water problem
- EIA studies for developmental projects
- Remote sensing- physics and application of remote sensing to retrieve land surface biophysical parameters in the optical, thermal and microwave domains.
- GIS- Development of Decision Support systems for socioeconomic, academic and industrial applications
- GIS- For socioeconomic, academic and industrial applications
- Satellite image interpretation
- Dam break analysis
- Training in Free and Open Source Software including GIS, statistical analyses
- Training in Disaster Management approaches & practices (in association with CHAERT)

Executing a paid consultancy for the department on River banking mapping and auditing in Mogral river, Kasargod. Funded by ILDM, Revenue department, Govt of Kerala. Rupees two lakhs received. Principal Investigator - Dr. E. Shaji. Dept of Geology.

## **XII. Department of Optoelectronics**

### **ABOUT US:**

The Department of Optoelectronics has established on 1995 with a focus on research in the field of Photonics, Optoelectronics and Optical Communication. We offer M. Phil, M. Tech and Ph. D programmes. The Department is well equipped with advanced laser systems, various thin film coating units and characterization instruments that makes it one among the top centres of Optoelectronic research.

### **MISSION:**

- To make the Department a centre of excellence for teaching and research in Optoelectronics.
- To enter into tie-ups with industry for joint projects for technology development and transfer.
- To make collaborative work with International/National Universities and Institutions for data sharing, utilizing facilities and interdisciplinary research in the coming years.
- To provide advanced technologies and facilities in various fields of Optoelectronics applications.

### **VISION:**

Making an impact through Research, Training, Technology Innovation and Service to Society

### **PROGRAMMES OFFERED:**

➤ <b>M. TECH - ELECTRONICS AND COMMUNICATION</b> (OPTOELECTRONICS AND OPTICAL COMMUNICATION)	➤ <b>M. PHIL</b> (PHOTONICS )	➤ <b>Ph. D</b> (OPTOELECTRONICS)	➤ <b>PDF</b> (OPTOELECTRONICS)
---	----------------------------------	-------------------------------------	-----------------------------------

**OUR EXPERTISE:**

NANO BIOPHOTONICS	THEORY	THIN FILM	LASER APPLICATIONS	FIBER OPTIC COMMUNICATION
<ul style="list-style-type: none"> <li>➤ NANOPHOTONICS</li> <li>➤ NANOPHOSPHORS</li> <li>➤ GAS SENSORS</li> <li>➤ NANOMATERIALS</li> <li>➤ CERAMICS</li> <li>➤ BIOPHYSICS</li> </ul>	<ul style="list-style-type: none"> <li>➤ FRACTALS</li> <li>➤ BIOMEDICAL SIGNAL PROCESSING</li> <li>➤ NONLINEAR TIME SERIES</li> <li>➤ NANOFUIDS</li> <li>➤ ARTIFICIAL NEURAL NETWORKING</li> </ul>	<ul style="list-style-type: none"> <li>➤ RF SPUTTERING</li> <li>➤ PULSED LASER DEPOSITION</li> <li>➤ THERMAL VAPOUR DEPOSITION</li> <li>➤ SPIN COATING</li> </ul>	<ul style="list-style-type: none"> <li>➤ NON DESTRUCTIVE EVALUATION</li> <li>➤ NONLINEAR OPTICS</li> <li>➤ SPECKLE AND HOLOGRAPHY</li> <li>➤ PHOTOTHERMAL SPECTROSCOPY</li> </ul>	<ul style="list-style-type: none"> <li>➤ PHOTONIC CRYSTALL FIBRE</li> <li>➤ FIBRE SENSORS</li> </ul>

**MAJOR FACILITIES:**

<ul style="list-style-type: none"> <li>➤ FIELD EMISSION SCANNING ELECTRON MICROSCOPE WITH EDX</li> <li>➤ MICRO RAMAN SPECTROMETER</li> <li>➤ SPECTROPHOTOMETERS</li> <li>➤ SPECTROFLUOROMETER</li> </ul>	<ul style="list-style-type: none"> <li>➤ HIGH POWER PULSED LASERS</li> <li>➤ HE-CD, HE-NE CW LASERS</li> <li>➤ THIN FILM COATING UNIT</li> <li>➤ LIBRARY WITH 3500+ BOOKS</li> </ul>
--	--

**RESEARCH OUTPUT:**

➤ 400+ JOURNAL PAPERS	➤ 500+ CONFERENCE PAPERS	➤ 5 PATENTS (Applied)	➤ 45+ Ph.D Awarded
-----------------------	--------------------------	-----------------------	--------------------

#### **SUCCESSFULLY COMPLETED PROJECTS IN THE LAST 5 YEARS:**

- Govt. Of Kerala (Rs. 5.63 Crore) on “Setting up of Advanced Nanophotonic Laboratory for Device Application”.
- Govt. Of Kerala (Rs. 50 Lakh) on “Setting up of Advanced Laser Fabrication Laboratory”.
- DST SERB (Rs. 49.74 Lakh) on “Advanced Photon Flux Density Measurements For Photonic Info-Energy Transfer”.
- DAE BRNS (Rs. 31 lakhs) on “Design and Characterization of a Q-Switched Fiber Laser using Large Mode Area Fiber and Photonic Crystal Fiber (PCF) for Laser Cleaning Applications”.
- ISRO (Rs 22.4 Lakhs) on “Investigations on The Role of Aerosol, Cloud and Water Vapour on The Precipitation Characteristics of Indian Summer Monsoon”.
- KSCSTE (Rs. 15 Lakh) on Back to Lab -“Development of Holographic Lens to Use in Conjunction With Solar Cells”.

### **XIII. Department of Physics**

**Department of Physics** was established in the year 1970. Academic programs in the Department include M.Sc. Physics (with specialization in Applied Electronics), M.Phil Physics and Ph.D program. Main areas of research include Nanostructured Materials, Microwave Dielectric Materials, Materials for Electromagnetic Shielding, and Materials for Fuel Cell Electrolytes and Electrodes.

#### **Instrumentation Facility Available in the Department**

- Photoluminescence spectro photometer
- UV-Visible spectrophotometer
- Network Analyzer
- Source Meter
- Electrometer
- Electrical Conductivity Measurement in Vacuum and Desired Atmosphere
- High temperature Sample holder for Impedance Measurement
- Electrochemical Workstation
- Muffle furnaces
- Hot air Ovens and Microwave Oven
- Z-scansetup

#### **Consultancy Areas:**

- Nanostructured transition metal oxide based supercapacitors
- Development of nanostructured transition metal oxides with engineered electrical properties
- Development of materials for dielectric resonators
- High K dielectric materials
- Materials for Electromagnetic Shielding Applications
- Materials for Fuel Cell Electrolytes
- Materials for Fuel Cell Electrodes
- X-ray Diffraction Analysis of Materials
- Inorganic oxide based phosphors

## **XIV. Department of Psychology**

The Department of Psychology was started in 1957 in the University college campus at Palayam. The Department was shifted to Kariavatom in 1968. The Department is offering MSc. Applied Psychology, M. Phil. in Consulting Psychology, M. Phil. in Learning Disabilities, Post Graduate Diploma in Counselling (Geriatric) and Ph.D. Programme. Psychology Consultancy Cell was started in 2019 and offers multiple services to the campus community, various institutions and the public. Care Counselling and Testing Centre”is another initiative which cater the counseling and mental health services to students and staff of University and public.

### **Psychotherapy and Counselling for:**

- Mental Health issues of children, adolescence and adults
- Family issues
- Individual and Group
- Pain Management

### **Psychological Assessment::**

- Intelligence
- Memory
- Personality
- Aptitude
- Academic readiness
- Specific Learning Disabilities
- Children with special needs
- Neuropsychological Assessment

### **Consultancy Services to:**

- Reserch Activities
- Corporate Institutions
- Academic Institutions
- Industrial Organizations
- Sports and Youth Development
- Event Management for Academic Programmes

### **Other Initiatives**

- TOT Programmes
- National and International Seminar/Conference
- Workshops on Demand.

## **XV. Department of Statistics**

The Department of Statistics, University of Kerala is the second oldest University teaching department in India and is committed to advancing knowledge and learning through teaching and research in Statistics. The Department offers M.Sc.(Statistics), M.Sc.(Applied Statistics and Data Analytics) and M.Phil.(Statistics) degree programmes as well as research leading to Ph.D. degree in Statistics. All teachers of this department offer Statistical Consultancy Service which provides general advice on the application of statistical methods. This department offers Statistical Consultancy to the academic as well as industrial community in and around Trivandrum. This department also offers Statistical Consultancy to state government departments like State Planning Board, State Agricultural Prices Board (SAPB), KIRTADAS (Kozhikode), Commissionerate of Entrance Examinations, Kerala Public Service Commission, Kerala State Electricity Board Ltd (KSEBL) etc. The Department has M.O.U.s with Georgian Technical University, Georgia (Academic Collaboration) and Cognub Decisions Solutions Pvt. Ltd, Technopark Campus, Trivandrum (Industrial Collaboration). Three faculty members of this department won MATRICS research grant for top researchers Mathematical Sciences. The department has produced more than 110 research papers in peer-reviewed international level research journals in Statistics during last 5 years. The department is conducting both national level and international level workshops, training programmes and seminars/conferences with effect from 2015 every year. The department has produced around twenty PhDs during last five years, which is around 50% of the total PhDs produced by this department during last 75 years. Among these PhDs, two PhDs are in the area of Cancer Research, done in collaboration with Regional Cancer Centre (RCC), Trivandrum.

### **Consultancy Areas:**

- Agricultural Statistics
- Big Data Analytics
- Biostatistics and Clinical Trials
- Data Analytics
- Exploratory Data Analysis
- Marketing Research
- Multivariate Techniques
- Reliability
- Sampling Techniques
- Stochastic Modeling and Time series
- Survey design, planning and implementation
- Training Programmes/workshops in Statistical Methods for Data Analysis using softwares such as R, PYTHON, SPSS, STATA, MINITAB etc.



## **XVI. Department of Zoology**

The University Department of Zoology was established as a full-fledged teaching and research department in July, 1968, at Kariavattom and the main areas of research are: - Insect Physiology, Endocrinology, Muscle Physiology, Wild Life Biology, Animal Physiology, Animal Behaviour, Vector Biology, Environmental Biology, Stress Physiology, Fish Biology, Aquatic ecology and Natural products. Active research in these areas is in progress with substantial financial aid from national funding agencies. Adequate facilities are available for the research in mentioned areas.

### **Consultancy Areas:**

- Aquaculture
- Biodiversity assessment part of the Environment Impact Assessment
- Bio-monitoring of Wetlands
- Survey of birds, butterflies etc.
- High-throughput screening of hair, skin and cancer molecules and crude extracts (animals and plants)
- Hair and skin products validation using 3D cell culture
- Evaluation of Ayurvedic formulations (Hair and Skin)
- Tissue Culture (Stem cells, Primary Cells, Keratinocytes, Splenocytes, T cell etc.)
- Toxicity studies
- Omics, NGS data analysis and Interpretation
- Validation and confirming transcriptome, protein and metabolomics
- Microscopic techniques (Fluorescent, Confocal, TEM, SEM and Photon Excitation Microscopy)
- Genomics, Proteomics and Metabolomics Studies and Techniques
- Retrovirus Preparation and Transduction Pedagogic Services
- Virtual learning Platforms
- E learning solutions
- Curriculum in design and development

**SOCIAL SCIENCES DEPARTMENTS**  
**UNIVERSITY OF KERALA**

## **XVII. Department of Archaeology**

The Department of Archaeology was established in 1997 with an intention to offer postgraduate teaching and research facilities in Archaeology. It was formally inaugurated in 1998 as part of the Diamond Jubilee Year Celebrations of the University of Kerala. The Department was first headed by Dr Ajit Kumar followed by Dr Rajesh S.V. Presently Dr PreetaNayar heads the Department. The Department offers M.A., M.Phil., Ph.D. and Post-Doctoral programmes.

The Department mainly focusses on field oriented research studies. The works carried out during these years have brought out promising results. These results are published in book forms or as research articles in peer reviewed journals, besides some of their popular versions appear in vernacular magazines.

The Department publishes an annual peer reviewed international journal entitled 'Heritage:Journal of Multidisciplinary Studies in Archaeology'. The Department has a fairly good archaeological museum mainly enriched by artifacts collected from different parts of India while executing the research projects by the staff. The Department is involved in the process of setting up archaeological Laboratories including ceramic petrology thin section facilities covering different aspects of specialization in the subject.

The Department of Archaeology has been extending consultancy services in the following fields:

- 1. Faunal Studies:**1. Kerala State Archaeology Department—Kottappuram Excavation 2. University of Hyderabad—Gajagirigutta Excavation 3. Tamil Nadu State Archaeology Department—Alagankulam and Pattaraiperumbudur Excavations 4. Deccan College, Pune—Manikpatana excavation and 5. Mysore University and Hartwick College, New York, USA—Tekkalakota Excavation.
- 2. Ceramic Studies:**1. Kerala State Archaeology Department—Kottappuram Excavation
- 3. Iconography:** Kerala State Archaeology Department—Sculptures exhibited in Kerala State Museums
- 4. Museum Display:** Kerala State Archaeology Department—Hill Palace Museum, Trippunithura
- 5. Educational Museum Tour:** For school and college student groups

These consultancy services are being carried out as mutual academic collaborations promoting research interest of involved parties without any monetary benefits.

## **XVIII. Department of Commerce**

The Department of Commerce was established in 1985 as a teaching and research department of the University of Kerala. Within a span of 34 years, we were able to establish ourselves as a Centre of excellence with focus on education, research, consultancy and extension services. The department has completed various milestones in its academic endeavor making it unique of its kind. Currently the Department offers M.Com, M.Phil and Ph.D programs with specialization in Finance and International Business. Completion of UGC-SAP project in 2014, GIAN ACADEMIC workshop with global resources in 2017, major consultancy work for the industry, innovative project on financial literacy and social sector projects are a few to mention. The Department initiated an additional M.com programme in the year 2019 – M.com Global Business Operations. Our faculty continues to support the university in several capacities and we have undertaken workshops and seminars on an annual basis. Our extension services have been well taken by the society specially those related to career development – My Career My Dream is such a flagship program. Joint research projects and programs with institutes like Indian Institute of Information Technology Management and Gulati Institute of Finance and Taxation are achievements of the Department. The Department has its own Research Forum, an academic body of researchers. The forum brings out the journal entitled “Commerce and Business Researcher”

### **Consultancy Areas:**

- Support for selection of Employees- Testing and Inducting
- Project Appraisal
- Utilization and Access of credit – regional and sectoral
- Man power Planning
- Financial Planning
- Financial Literacy and Inclusion
- Rural credit requirements
- Financial services utilization – NBFCs, Capital Market, Mutual Funds, Banks, Depository Participants
- Rural credit and Empowerment – SHGs and Micro Finance
- Career Guidance and Counselling for Business Education
- Financial Statement Analysis and Interpretation
- Case studies for : Banks, NBFCs, Co-operatives, NGOs, Trade Unions ,Non Profit Organizations
- Case Writing and Content Development in the areas of Finance, HRM, Marketing, Banking, Rural Development, Entrepreneurship
- Tourism and Tribal Tourism
- Government Accounting : Convergence Issues

## **XIX. Department of Economics**

The Department of Economics, University of Kerala is one of the leading centres for teaching and research in the field of economics. It has achieved spectacular track records in teaching and research and is privileged to have groomed so many talented students who continue to bring honour to this institution. Faculty members provide consultancy services to various institutions including State Planning Board, Ministry of Agriculture, Gulati Institute of Finance and Taxation etc.

### **Consultancy Areas:**

- Economics of Education in India and Kerala including programs and policies, Costs and Finances, Expansion, Efficiency and Equity, inclusive Growth, Educational Exclusion and Role of Subsidies and FDI in Higher Education
- Tribal Economics, Poverty Analysis
- Health Economics, Data Analysis
- Environmental and Natural Resource Economics, Development Economics
- Law and Economics, Institutional Economics, Industrial Economics
- Gender economics, Solidarity/cooperative economics and Labour economics

## **XX. Department of Education**

The Department of Education was started in 1956 and with the launch of Ph.D. programme it became one of the earliest University Departments in India to do so. The department has been recognized by the UGC, DSA scheme (1986), as National Centre for Curriculum Development in Education (1986). The Department is linked with SCERT, NCERT, Kerala State Higher Education Council and the like bodies in the Design and try out of curricular reforms. The Department has three centers namely (1) Curriculum Development Centre (2) Centre for Educational Technology (3) Centre for Learning Disabilities and Difficulties.

### **Consultancy Areas:**

- Guidance and Counseling Services.
- Consultancy relating to learning disabilities & difficulties.
- Consultancy with respect to curricular innovations and reforms.
- Consultancy related to E-content Development.
- Study on teaching

## **XXI. Department of History**

The Department of History has emerged as a noted centre of historical research and teaching, attracting worldwide attention and appreciation. Its image as a research institute was bolstered by the Ninety two year old 'Journal of Indian History' and the Forty year old 'Journal of Kerala Studies'. Eminent Scholars and a Vice-Chancellor have adorned the faculty of the Department.

### **Consultancy Areas:**

- Trends in Historiography and Historical Method
- History of Modern India and Western Studies
- Constitution of India
- Consultational History of India
- Cultural Studies
- Environmental Studies
- History of Socially and Educationally backward classes (affirmative action)
- Literature & History
- Interdisciplinary approach & Cultural Studies
- Social Movements in Kerala.

## **XXII. Department of Library and Information Sciences**

The Department of Library and Information Science was established in 1961. It offers Master's Degree in Library and Information Science, M.Phil and Ph.D. The Department provides learning opportunities in Library and Information Science. It undertakes research projects and continuing education programmes in Library and Information Science. Cent percent of our students are getting employment in various library, information centres and information and communication technology related firms.

### **Consultancy Areas:**

- Indexing work
- Web archiving
- Library automation
- Abstracting Services
- Digital Reference Service
- Current Awareness Service
- Compiling bibliographies
- Binding services
- Digitizing the collection
- Retrospective conversion of library records
- Retrospective Cataloguing
- Database design and compilation
- Creation of library websites
- Helping in library stock verification work
- Helping libraries develop specialized services
- Helping in the starting of new libraries including equipment etc.
- Compilation of Union catalogue
- Newspaper cutting and filing services
- Helping libraries to develop special storage strategies
- All Information & Communication Technology Business
- Design and implementation of Information systems and networks
- Providing training and manpower development for the organization



### **XXIII. Institute of Management in Kerala**

Institute of Management in Kerala, set up in 1991, offers MBA in areas General and Tourism, M.Phil and PhD. in Management studies. Many of the alumni are working as top executives and many are entrepreneurs. In 2009, IMK was rated as one of the best 7 b schools in Universities as departments in India. The faculties have consulting experience and have won many awards to their credit.

#### **Consultancy Areas:**

- Feasibility study
- Marketing Research
- Financial feasibility
- Entrepreneurship venture studies
- Customer surveys
- Organisational Restructuring
- Brand management studies

Training programmes aimed at entry level and middle level managements can also be offered based on the needs of the clients. Management Development programmes aimed at top level executives can be offered. Short term training aimed at skilled, semi- skilled and supervisory level staff can be offered on specific areas.

## **XXIV. Department of Philosophy**

The Department of Philosophy, University of Kerala is marching ahead since its inception in 1979 with an excellent trackroad on teaching and research activities. The Department runs a Centre on Philosophical Counselling and Research . Keeping par with the cutting edge of the new academic scenario, the Department offers a variety of courses under the PG and M.Phil programs and has produced 30 Ph.D's and a few doctoral theses. About 100 students have secured M.Phil degrees.

The Department is actively engaged in a lot of research programs including UGC projects, publication of books, conduct of international and national seminars, syllabus revision workshops etc. with the assistance of UNESCO, UGC, ICPR, ICMR as well as the University of Kerala. The active participation in the SIP programme of the University conducted a few years ago is a highlight of the Department.

### **Consultancy Services**

The Department has the technical expertise to give consultancy services in the following domains:

- Training programmes on ethics and values to administrative officials, bureaucrats, and fresh recruits.
- Collaborative training programmes with governmental institutes like IMG,KILA and other Scientific Research Institutes and local bodies on critical thinking, analytical reasoning and ethical decision making.
- Decision making in Scarce Medical Resources in the context of Disasters and Pandemics
- Preparation of ethical manuals for governmental bodies, research institutes and local bodies.
- Ethical Questions and Case studies involving research on human subjects
- Professional Ethics
- Cyber Ethics and Ethics of IT
- Research Ethics
- Ethical Issues in environmental policies
- Yoga and Healthy Lifestyles
- Mindfulness and Mental Wellbeing
- Philosophy of Self-Management
- Philosophy in Counselling
- Philosophy of Science
- Consciousness Studies and AI

- Human Rights and Social Justice Issues
- Critique on Gender Issues and Identity Crisis
- Phenomenological Issues Faced by Displaced Migrants
- Consultancy in issues relating to human predicament and existential crisis
- Philosophy of Social Integrity and Social Change
- Critical Outlook on the Paradigm shifts in Socio - Political Concepts
- Aesthetic Appreciation of Art and Film

## **XXV. Department of Political Science**

Established in 1956, the Department offers M.A., M. Phil., and Ph.D. programmes. The Department has successfully completed lot of research projects funded by various national and international agencies like the Election Commission of India, Indian Space Research Organisation, Centre for the Study of Developing Societies, Department of Rural Development, Government of Kerala, Claremont Graduate University, California, US and New South Wales University, Sydney, Australia. We are also into the second stage of the Special Assistance Programme funded by the UGC. The Department itself has a Survey Research Centre which takes up many surveys and studies for Central and State Governments, Universities and other Public and Private Undertakings.

### **Areas of Consultancy:**

- Socio-political Surveys
- Election Studies
- State and Society in India
- Public Policy Analysis
- Civil Society Movements
- Foreign Policy
- Local Governance
- Migration and Pravasi Issues
- State and Politics of Kerala
- Land Reforms
- Human Rights issues
- Training for elected Representatives
- Issues of Environment and Development
- Issues relating to transgender

## **XXVI. Department of Sociology**

The Department of Sociology, established in 1969, offers two post graduate courses (MA Sociology and MSW), M.Phil Course, Doctoral and Post-Doctoral Research. The Department also is offering two certificate courses through School of Distance Education, University of Kerala viz. *Techniques and Methods of Family and Marriage Counseling & Geriatric Care and Management*. The Department has five permanent faculty members, four Contract lecturers and two guest faculty members. Thirty research scholars including 3 International students from countries such as Sri Lanka, South Sudan and Iran are pursuing their research in the Department. The Department has been providing consultancy services to various government and public sector organizations and projects, namely, Inter State Migration in Kerala in association with **GIFT**; Social Audit for Rural Development in association with **MGNRGEP**; Socio-Economic Survey of Street Vendors in association with **Trivandrum Corporation** as part of the National Urban Livelihood Mission Programme (NULM); Old Age related Programme and Book Publication in association with **State Resource Centre**.

### **Consultancy Areas:**

- Migration and Related Issues
- Development and Displacement, Resettlement, Rehabilitation
- Social Gerontology: Monitoring and Evaluation of Old Age Homes, Elder Issues etc.
- Social Intervention among Disaster affected People
- Issues of Excluded Communities
- Gender Studies
- Environmental Issues
- Non-Governmental Organizations
- Participatory Rural Appraisal
- Need Assessment studies
- Evaluation studies
- Social Audit
- Science Technology Society (STS) studies

**ARTS & HUMANITIES DEPARTMENTS**  
**UNIVERSITY OF KERALA**

## **XXVII. Department of Arabic**

The Department of Arabic, University of Kerala was established in 2001 with an objective to mould youngsters with capability to handle Arabic and English languages simultaneously, which are very essential to cope with the challenges of the time. The courses in the department emphasize on professional, technical and commercial areas of translation along with literature. To attain this objective the department offers various courses like, Ph.D, M.Phil, M.A., Certificate Course in Communicative Arabic (part time regular & online), Diploma in Communicative Arabic, and Certificate course in Arabic Typing. The department has been rendering its service in the field of translation and acknowledged by the governmental agencies like the Ministry of Home & the office of the Protector of Emigrants as their approved translation and attestation centre. We provide the translation (From Arabic to English/Malayalam & vice versa) solutions on time and on budget; with standards for quality and accuracy.

### **Consultancy Areas:**

- Arabic Consecutive Interpretation
- Arabic E-Learning Supports
- Arabic Simultaneous Interpretation
- Arabic Staffing Solutions
- Arabic Transcription
- Arabic Typesetting and Graphics
- Arabic Virtual Data Room Services
- Arabic Voiceovers and Subtitling
- Business Documents translation
- Legal Documents translation
- Official Documents translation
- Provide new methods to teach Arabic for Non-Arabic speakers, especially in the school level / trainers
- Services for Arabs who come for treatment / with hospitals
- Short term gulf packages (Arabic for travellers): For persons want to migrate to Middle East we provide short term packages to provide them basics of communication in Arabic. Large scale of migrants from the state are settling in middle east which increases the scope of the service
- Tour packages / Tour companies
- Translation of manuscripts in Kerala to Arabic language and Arabic to Malayalam / English

## **XXVIII. Department of Communication & Journalism**

The Department of Communication and Journalism, University of Kerala was established in the year 1976, and offers a two year Masters Degree course in Communication and Journalism (MCJ), and Ph. D programme in Journalism. Majority of students who have passed out of this department are working with reputed media organizations in the country and abroad. The new trend in the field is practices of Digital Media of which department is doing exercises like DCJ Online TV, You tube channel and MOJO (Mobile Journalism). Another new attempt is in the area of Communication campaigns and Public Relations for which Department is offering courses. The Department is publishing two practice journals of the students- one in English called 'Univ Voice' and the other in Malayalam named 'Kalari'.

### **Consultancy Areas:**

- Audience analysis for print and electronic media
- Media gratification studies for media houses
- Corporate communication services for media firms
- Designing public relations campaigns
- MOJO practices
- Mapping Media History and archiving



## **XXIX. Department of English**

The Institute of English is a premier institution for higher learning and research in the state, offering Ph.D, M.Phil., M.A. and APGDEC programmes. It has been in the forefront of critical and creative thought, with emphasis on interdisciplinarity and cross-cultural praxis. The Institute has always helped students develop social skills and positive social consciousness. Renowned faculty with super specialty training in Language Studies, Literary Studies, Cultural Studies, Gender Studies, Australian Studies, Canadian Studies, Women's Studies, and Dalit Studies impart teaching and consultancy in these areas:

- Developing Curriculum in English Language  
Teaching for schoolteachers
- Novel Methods of Language Acquisition
- Literary Studies
- Cultural Studies
- Gender Studies
- Australian Studies
- Canadian Studies
- Dalit Studies
- Translation and Translation Studies
- Academic Writing
- Creative Writing
- Copy Editing
- Text Editing
- Gender and Sexuality Studies
- Soft Skills
- Film Appreciation

## **XXX. Department of German**

The Department of German started officially the consultancy services to the public in 2019. There is a huge demand from the corporate world and from the public for technical translations of German documents into English and vice –versa, and attestation of the various certificates for employment opportunities in Germany and for the educational purposes in higher education in Germany. The Dept. provides the solutions to all these various needs from different sectors. Apart from PG courses, Certificate, and Diploma Course in German, there are six short term courses like A1, A2, B1, B2, C1 and C2 which will be launched soon to the students as per the CERFL guidelines. It will be an opportunity to improve the German skills for technical professionals, nursing communities, doctors, Engineers and translators to find a better placement chances in India and abroad.

Consultancy Services:

- Translation and attestation of various Degree certificates from German to English and vice-versa for granting Visa to Germany for employment and higher education.
- Translation of scientific, technical and legal documents, and passport from German to English and vice –versa.
- Simultaneous interpretation from German to English and vice –versa
- Literary translation from German to Malayalam, English and vice-versa.
- Online teaching to foreign students and Indian students
- Offering A1-A2 Level short term courses (80 hrs) in German language

### **The income generated**

- 1) Year 2020 - ₹ 26,550/-
- 2) Year 2019 - ₹ 29,500/-

## **XXXI. Department of Hindi**

The Department of Hindi was established in the Kariavattom Campus of the University of Kerala in the year 1990. It was established with the aim of higher studies and advanced Research in Hindi Language and Literature and also for the purpose of extension of the Language and culture .The Department is modernizing its Language Laboratory with cutting edge technology to enrich the Laboratory to give state of the art facility,. This will help the teachers in the region to get trained in language technology and computer aided language teaching.Special facilities available in the department include: A departmental Library with 16000 volumes and almost all the leading literary journals and Smart class rooms.

### **Consultancy Areas:**

- Translation of Classic literature,
- Official document translation,
- Translation of reports
- Consultancy Collaboration with Various Government of India offices and Public sector like HLL life care and Nationalized banks.
- Cultural studies – Kerala culture (especially Marma and Kalaripayattu).

## XXXII. Department of Linguistics

The Department of Linguistics, University of Kerala was established in 1963. The Department promotes advanced research in all aspects of language including Theoretical Linguistics and Applied linguistics. The outcome of the Department include hundreds of dissertations, articles, study reports and research project on various aspects of linguistics. Research is going on in different areas of linguistics, such as Language teaching, Language acquisition and learning, translation, language technology, Neuro linguistics, psycholinguistics, sociolinguistics, forensic linguistics and language documentation. The Department has a Phonetics Lab with recording and Analysis facility.

### **Consultancy Areas:**

- Language Analysis
- Language Technology and Tool making
- Development of Machine translation systems
- Translation theories, techniques and evaluation
- Language disorder, Learning disability
- Dictionary / glossary making
- language policy making and issues
- Language standardisation
- Language teaching and learning methods
- Language changes and language shift
- Tribal language studies
- Linguistic survey and identifying linguistic minorities
- Cyber linguistics and local languages
- Forensic linguistics

## **XXXIII. Department of Malayalam**

The Department of Malayalam has attained a very high status in teaching and research activities in the last five decades. Now we offer MA, M. Phil and Ph. D courses in Malayalam Language and Literature. Nine regular faculty members are serving in department. We own the largest department library having a collection of more than 70,000 books and a good number of journals.

### **Consultancy Areas:**

- Correction of lexical and grammatical usage and pronunciation on of Malayalam language
- Correction of translation passages from Malayalam to English vice-versa
- Preparation of syllabus to various courses/papers of Malayalam language and literature.
- Setting of question papers and evaluation of answer scripts of various examinations/tests.
- Editing works of journals/books in Malayalam.

## **XXXIV. Department of Music**

The Department of Music was established on 24<sup>th</sup> July 1998. Initially the Department offered MA Music (CSS) course. A 'Sangita Mandapam' inside the Department premises was inaugurated by Dr. B. Ekbal, the then Hon. Vice-Chancellor, University of Kerala. Dr. K. Omanakutty and Dr. B. Pushpa were Heads of Depts. and presently Dr. Bhavana T.M is in charge. Since 2003, the following courses also started: MA (SDE); Ph.D (full-time & part- time); From 2006 onwards, M.Phil Degree course was started

### **Consultancy Areas:**

- Staging of musical Concerts, Ganamelas, JugalBandhi, VadyaVrindham
- Lecture Demonstrations, & Seminars
- Therapy based Musical Programmes
- Music Composing

## XXXV. Department of Sanskrit

The Department of Sanskrit started functioning in 1963 under the headship of Dr. A. G. Krishna Warriar, one of the famous Indologists of that time. The Department aims at, the promotion of higher studies and research in the different branches of Sanskrit learning. The Department offers M.A. and M.Phil in Sanskrit and facilities for research leading to Ph.D. Degree for regular students. Research and publications were given importance along with teaching. The faculty members have contributed immensely to the discipline through their books and research articles. The Department has also organized several National level seminars, refresher courses and workshops for the propagation of Sanskrit knowledge. Presently the Department offers inter-disciplinary Elective courses to Departments like Hindi, Malayalam, History, Archaeology, Psychology and Philosophy.

### Consultancy Areas:

- Translation: Where the source or target language is Sanskrit.
- Correction of grammatical and lexical errors
- Editing of books or journals in Sanskrit
- Sanskrit subtitling of films, short-films and documentaries
- Motto creation for institutions, companies and in

## XXXVI. Department of Tamil

Department of Tamil in the University of Kerala is instituted in the year 1944 under the headship of eminent Professor, M .Raghava Aiyangar. Department has produced many Vice chancellors to various reputed universities in Tamilnadu and other states. Now the department is conducting courses on M.A. and M.Phil. in Tamil Language and Literature. The department also offers Ph.D. and Post Doctoral programs. The Department has also organized several National and International seminars and workshops. The Department offers elective course on Tamil language to other Departments.

### **Consultancy Areas:**

- Translation from Tamil, Malayalam & English etc.
- Editing of Manuscripts
- Tamil, Malayalam and English Lexical Works
- School Curriculum formation in Tamil Language.
- Machine Translation and Computational Tamil
- Women Empowerment
- Interpretation of Inscription
- Tribal Language Interpretation
- Editing of Journals and Books
- Legal Translation in Tamil
- Functional Tamil to Non-Tamils.



Revised Consultancy Guidelines (2020)

**1. Purpose**

University of Kerala promotes the use of its intellectual and infrastructural resources for serving external organizations, agencies and individuals, not only as a source of income, but as an opportunity for teachers, technical staff, research scholars and students to involve in real life problems and gain valuable experience and to foster linkages with industries and external organizations. These guidelines are issued to streamline and enable all consultancy services offered by the Departments and Centres of the University of Kerala. The operation of the externally funded research projects **shall not** be covered under these guidelines and shall be governed by the rules framed by the University for Research Projects.

**2. University Consultancy Cell(UCC)**

**2.1 Constitution of UCC:** UCC is a body constituted for enabling, overseeing and managing consultancy services offered by the University. It shall consist of 12 members as follows:

(i) *The Vice-Chancellor (Chairman)*

(ii) *The Pro-Vice-Chancellor*

(iii) *One Syndicate member nominated by the VC*

(iv) *The Registrar*

(v) *The Finance Officer*

(vi) *The Director (Planning &Development)*

(vii) *The Director of Research*

(viii) *Director of IQAC*

(ix) – (x) *Three Heads of the University Teaching Departments, nominated by the VC*

(xi) *One Senior Professor, nominated by the VC.*

**2.2 Director of UCC:** One of the members nominated by the VC shall serve as the Director of the UCC and he/she shall convene UCC meetings under instructions of the VC and report to the VC on all matters relating to administration of the consultancy services.

**2.3 Support for UCC:** The UCC shall be provided with administrative support and secretarial assistance by the University.

**3. Definitions**

**3.1 Consultant:** A member of faculty, group of faculty members, or technical staff of University Departments, Centres and Service Centres/Depts. (such as Sophisticated Instrumentation Centre, Computer Centre etc.) who offer a service to an external organisation/agency/individual using his/her own expertise with or without the use of University infrastructure, shall be treated as consultants.

**3.1 Routine Consultancy:** Consultancy of a routine nature such as material testing (eg. water quality testing), analysis of samples (eg. bio-chemical parameter estimation) measurement, fabrication, calibration, data collection, data entry, and routine translation shall be considered as routine consultancy. Academic consultancy such as external student projects/internships or peer view etc. entertained in the Departments for which fees have been approved as provided in section 6.1, shall also come under

routine consultancy. The Head of the Dept./Centre shall nominally be considered the consultant for routine consultancy

**3.2 Individual Consultancy:** Consultancy that does not involve the use of facilities of the University/Departments/Centres and carried out by a consultant, is considered as individual consultancy.

**3.3 Institutional Consultancy:** Consultancy that involves the use of facilities in the University/Departments/Centres such as equipment, computer, laboratory facilities etc. and carried out by a consultant is considered as institutional consultancy.

**3.4 Sponsored Consultancy:** Project sponsored by industry, non-governmental organization or other institutions and involving activities such as analysis, testing, design, survey, field trial and software development etc. is considered as sponsored consultancy.

#### **4. Procedure for taking up Non-routine consultancy**

**4.1** Every consultancy shall be taken up by consultant(s) with prior consent of UCC.

**4.2** A client organization may approach the Registrar, School Director, Head of the Department/Centre, Director of the Consultancy Cell or the individual consultant, for seeking consultancy service.

**4.3** The request from the client (or the tender document), along with a summary note regarding the work, duration, working budget and proposed budget and all other relevant information shall be placed before the UCC by the UCC Director. The UCC shall meet as and when consultancy requests arise, and consider and dispose each application, as it deems fit. In cases of exigency or where the project outlay is less than 1 lakh, the UCC Director shall electronically circulate the details to UCC members and place the matter before the Vice-Chancellor (with comments, if any, from members) for sanction, which shall be reported to the next UCC meeting.

**4.4.** The UCC shall assign a unique number for each approved consultancy and the sanction letter shall be communicated in a standard format approved by the UCC, to the Head of the Department, Consultant and Client. The numbering shall commence from all consultancy projects active as on January 1, 2015.

**4.5** A consultant can take part in the tender floated by various departments/bodies of state and central governments, undertakings of state and central governments, quasi-governmental organizations, corporations, organizations in co-operative sector, World Bank, United Nations and associated agencies, for offering consultancy services. Further proceedings shall be with explicit consent of UCC. In case of requirement for consultancy from any other type of entity, the consultant shall inform the UCC before proceeding with participation in tenders.

#### **5. Budget, Accounts and Audit for Non-routine consultancy:**

**5.1. Receipts of amounts:** All payments related to consultancy work shall be made by the client to the UCC Director in the form of Bank DD or cheque drawn in favour of *Director, UCC, University of Kerala*. Net banking may also be used if the client so desires. No consultant shall receive any amount in his/her name directly from the client towards consultancy work.

**5.2 Consultancy budget formulation:** All consultancy budgets shall consider the following 3 components:

(i) *Working Budget/Direct Expenditure:* This shall cover actual expenditure incurred in providing the consultancy service including wages for casual engagements, field assistants etc, cost of materials,

stationary, consumables, reagents communication, travel, computing data entry etc. The consultant shall also provide for any honorarium for himself/herself under this category.

(ii) *Overhead Charges/Indirect Expenses:* This shall be fixed at 15% for individual and 20% for institutional consultancy (ie. components *i* and *ii* will add up to 100%) and cover administrative cost and also machinery/infrastructure depreciation and charges for utilization of space, water, electricity, internet etc. In case of individual consultancy where only intellectual resource of the consultant is used, this shall be fixed at 50%.

(iii) *Service tax:* The consultant shall propose to the client additional amount of 18% of the budget (or at rates prevalent) as service tax. In the event the client does not provide this explicitly, consultants shall provide for this under direct expenditure.

**53 Remittance of overhead charges:** The overhead charges under 5.2(ii) shall be remitted to DDF and KUF in the ratio 3:2 by the UCC Director, on completion of the consultancy. Savings, if any, from working budget shall be remitted to DDF.

**54 Special Cases:** (i) In case of large institutional projects where there is no leeway for effecting payment by the consultant, the UCC will take suitable decision for the smooth conduct of the consultancy project. (ii) For sponsored consultancy works involving only the consultant and not involving any direct expenses, guidelines for individual consultancy may be applicable, or else guidelines for institutional consultancy will be applicable. (iii) In consultancy projects where competitive bidding is involved, the percentage of overhead charges in 5.2 (iii) can be fixed suitably.

**55 Utilization of working budget:** Consultant can purchase equipments, computers, furniture and other necessary items, if rendering quality services require so and are within the working budget. All such items purchased as part of consultancy work shall be taken into stock in a separate stock register maintained by the Department. Such assets shall, after the completion of the consultancy work, be transferred to the Department. TA and DA shall be directly paid on actual from the working budget. Consultant shall maintain all record including registers, accounts and vouchers for the expenditure incurred. Registers, receipts, bills, and vouchers shall be maintained and audited by a Chartered Accountant (CA).

**56 Transferring consultancy amount:** It shall be the responsibility of the consultant to ensure that the total amount (proposed budget: 5.2(i) +(ii)+ (iii)) is transferred from the client to the UCC (in installments, if so agreed originally with the client). The Director, UCC shall remit all applicable government taxes to the concerned authorities and issue copies of the receipts to the consultant and if required, to the client.

**57 Depositing and disbursing consultancy amount:** The Director, UCC shall deposit the amount received for consultancy work in the UCC account and disburse the amount to the consultant and other parties as stated in these guidelines. The Department's share shall be transferred to DDF in favor of Head of the Department and University share shall be transferred to KUF.

**58 Annual Statements from HODs:** Annual statements of consultancy services in tabular form, giving name of consultant, name of client, budget, working budget, share to DDF and KUF, service tax remitted shall be forwarded by each Head of the Department concerned to UCC by 15<sup>th</sup> January of the succeeding year, in the format enclosed as Appendix A.

## **6. Budget and Accounts for Routine Consultancy**

**6.1 Rates for routine consultancy:** Rates for routine consultancy and split up of expenses including honorarium for staff involved, cost of materials etc. and an overhead of not less than 15% shall be recommended by the Departmental Council and shall be effective with the approval by the Vice- chancellor.

**6.2 Receiving payments for routine consultancy:** Payments for routine consultancy shall be made to the concerned Head of the Department which shall be received in the DDF.

**6.3 Annual Statements from HODs:** Annual statement of all routine consultancy in tabular form showing expenditure and savings shall be forwarded to the UCC by 15th January of the succeeded year by the HODs, in the format enclosed as Appendix B.

## **7. General**

**7.1 Annual Report:** An annual report of routine and non-routine of consultancy shall be prepared by Director of UCC based on reports sent by HODs as mentioned in sections 5.8 and 6.3. The report shall show all consultancy works active during the calendar year, showing actual expenditure and shares received by Dept. & University in each case. For routine consultancy, figures shall be shown lumped under each specific service. This report shall be forwarded to the Registrar, FO and IQAC before 31<sup>st</sup> January of the succeeding year, in the format enclosed as Appendix C. This report shall be included in the University's Annual Report.

### **7.2 Income Tax exemption**

Consultants shall inform clients that no TDS is to be deducted while making payment to the University in view of specific exemption under section 10 (23 C iiiab) read with circular No.4/2002 dtd. 16.7.2002 issued by CBDT.

**7.2 Consultancy Certificate:** Director, UCC shall issue a consultancy certificate (in the format enclosed as Appendix D, to consultants (non-routine), on request and/or on completion (to enable the reckoning of the same for career-related purposes), showing the following particulars: *1. Consultancy ID*  
*2. Name and affiliation of Consultant, 3. Title of Consultancy, 4. Type of Consultancy* 5. *Name of Consultancy Client, 6. Consultancy Budget including service tax, 7. Date of commencement and completion, 8. Amount remitted to DDF and KUF* 9. *Equipment's, if any, transferred to Dept. 10. Any other remarks.*

**Appendix-A**



**ANNUAL REPORT OF**

**NON-ROUTINE CONSULTANCY FROM DEPTS/CENTRES**

To be submitted by 15<sup>th</sup> January of each year, for the previous year

Name of Department:..... Year .....

CONSULTANCY No .....	
Name of Consultant	
Name of Client	
Budget (i) Working Budget	
Budget (ii) Overhead Charges	
Share to DDF and KUF	
Service Tax Remitted	
CONSULTANCY No .....	
Name of Consultant	
Name of Client	
Budget (i) Working Budget	
Budget (ii) Overhead Charges	
Share to DDF and KUF	
Service Tax Remitted	
CONSULTANCY No .....	
Name of Consultant	
Name of Client	
Budget (i) Working Budget	
Budget (ii) Overhead Charges	
Share to DDF	
Service Tax Remitted	
Share to KUF	
CONSULTANCY No .....	
Name of Consultant	
Name of Client	
Budget (i) Working Budget	
Budget (ii) Overhead Charges	
Share to DDF and KUF	
Service Tax Remitted	
General remarks, if any	

Date.....

Head, Dept. of .....







## University Consultancy Cell University of Kerala

[www.keralauniversity.ac.in/consultancy](http://www.keralauniversity.ac.in/consultancy)

### Certificate

1. Consultancy ID :
2. Consultant(&affiliation) :
3. Consultancy Title :
4. Type of Consultancy :
5. Total Budget :
6. Working Budget :
7. Overheads :
8. Service Tax :
9. Date of Commencement :
10. Date of Completion :
11. Amount Remitted to KUF :
12. Amount Remitted to DDF :
13. Equipments, if any, transferred to University:
14. Any other Remarks :

Date.....

Director, UCC.....





**University Consultancy Cell (UCC)  
University of Kerala  
2020**

