KISHINCHAND CHELLARAM COLLEGE

STAR COLLEGE SCHEME
DBT

Principal: Ms. Manjula Nichani
Co-ordinator : Dr. Sagarika Damle

Departments:
Chemistry, Statistics
Life Sciences, Microbiology,
Biotechnology

K.C.COLLEGE

Core values

- Gender Sensitization, Service to the larger Community, Social Justice, Nation Building, Environmental Consciousness

NAAC

- Reaccredited with A grade-3rd cycle

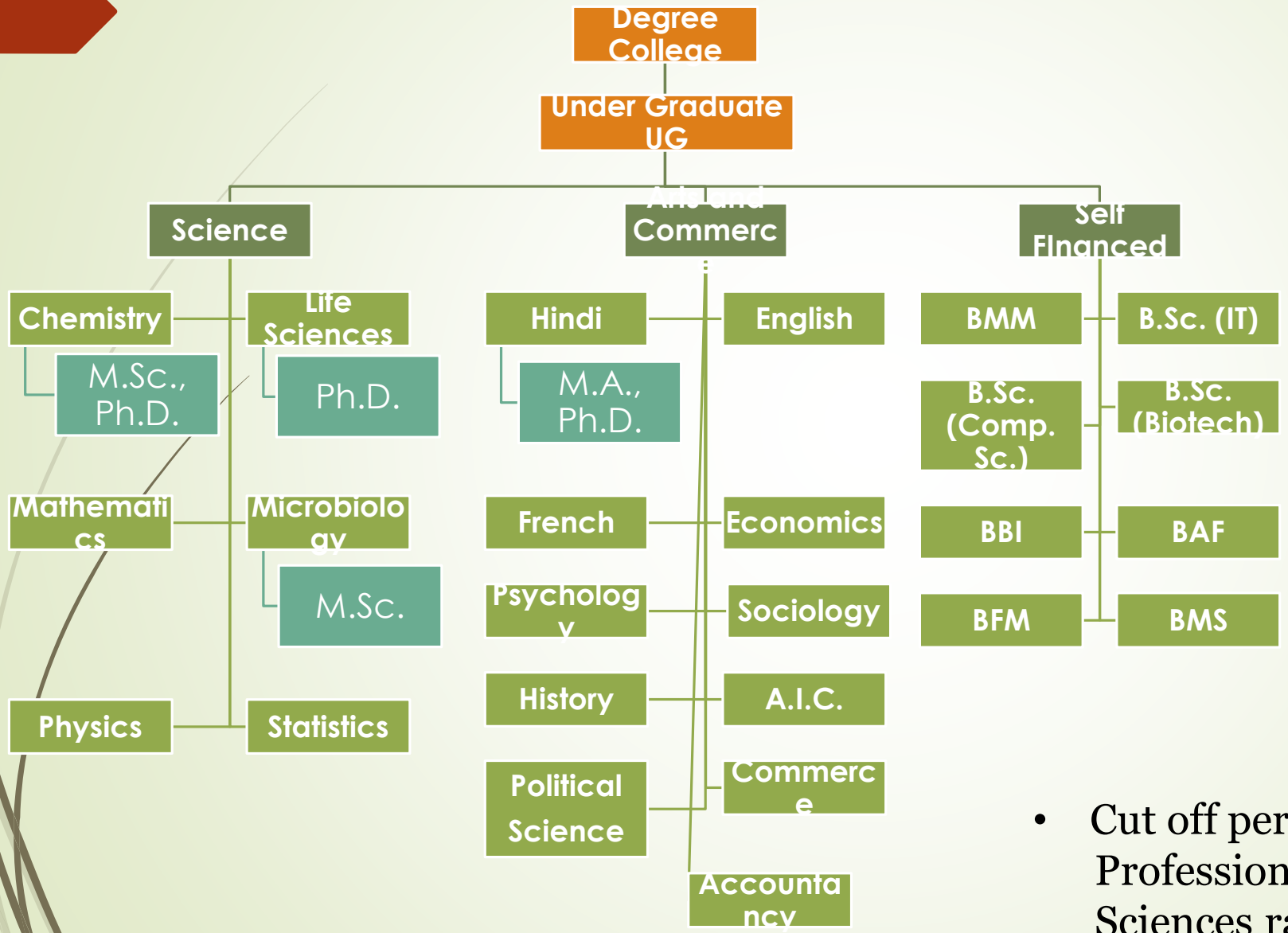
Awards & Grants

- Best College award by University of Mumbai 2013-14
- Best N.S.S. Unit & Co-ordinator : University & State level(3 years)
- Marathi Vigyan parishad UG research award: State level (3 years)
- 2 UGC Major projects ,1 IUAC Major project,7 UGC Minor research projects

Institute

- Pragmatic leadership, well qualified & proactive academic staff on regular appointment, skilled non teaching staff
- Upgraded infrastructure with ICT enabled facilities.

Courses offered



Rank Holders
University Level: 40

Year	No.
09-10	09
10-11	08
11-12	09
12-13	07
13-14	07

- Cut off percentage
  Professional courses: 90 %
  Sciences ranges between 50-60%

PROPOSED MODIFICATIONS IN CURRICULUM FOR EXISTING SCIENCE COURSES

Dept.	Papers & Experiments in current Curriculum	Papers/Experiments in Proposed	Faculty Expertise
Chemistry	Preparation of Inorganic complexes	Introducing Microwave Synthesis	Dr. Yogita Shinde
	Measurement of EMF of Daniel Cell	Calculation of Transport Number by Moving Boundary Method	Dr.Sunetra Chaudhri
	Ion exchange Method	Separation of metal mixtures.	Dr. Barathe (Ext) Dr. Rajesh Samant
	Purification of organic compounds (recrystallisation)	Introducing coloumn Chromatography	Dr.Meera Uchil (Ext) Dr.Sushil Puniyani
Statistics	One-Way, Two-way and Factorial ANOVA procedures using different problems.	Demonstration of ANOVA procedures using R and SPSS for different case studies with its interpretation and application	Dr. Shailaja Rane
	1. Practical on Non-parametric test (a problem solving approach) 2. Practical on Clinical trial and Bioequivalence (a problem solving approach) 3. Regression Analysis (a problem solving approach)	Demonstration of all these statistical analysis procedures using R and SPSS for different case studies with its interpretation and application	Prof. RJ Pawar Dr. S. Muley

PROPOSED MODIFICATIONS IN CURRICULUM FOR EXISTING SCIENCE COURSES

Dept.	Papers & Experiments in current Curriculum	Papers/Experiments in Proposed	Faculty Expertise
Life Sciences	Good Laboratory Practices	1. Study of Safety Symbols-Lab Safety 2. Demonstration of basic sterilization techniques 3. Training on Safe handling of chemicals & glassware (MSDS data)	Dr. Sagarika Damle
	Immunological Techniques (Hands on training)	1. Antigen Antibody reactions 2. Immuno assay 3. E.L.I.S.A.	Dr. Tejashree Shanbhag
	Molecular Biology	Hands on training for r DNA technology, PAGE.	Dr. Suvarna Sharma
Microbiology	Introduction to Bioinformatics	Use of softwares related to bioinformatics	Ms. Pratibha Shah
	ELISA Theory	Practical demonstration of ELISA technique	Ms. Prabha Padmanabha
	IPR Theory	Intellectual Property Rights & Career opportunities	Dr. Sanjay Deshmukh Mr. Aliasgar Dholkawala
Biotechnology	BIOSAFETY	Bio Safety Laboratory Regulation & Practices	Dr. Soumen Roy
	Genetic engineering(Demonstration)	PCR, Restriction mapping	Ms. Sharon K.
	Renewable/Alternative energy resources	Concept of energy audit & Entrepreneurial guidance	Dr. Leon Periera

CURRENT INFRASTRUCTURE & INSTRUMENTS WITH EXPERIMENTS DONE PRESENTLY & PROPOSED

Department	Existing Practical's in Curriculum	Current Infrastructure/ Instruments	Proposed Modification	Proposed Intrumentation
Chemistry	• Preparation of Inorganic complexes • Introduction to TLC • Titration to determine amount of strong acid using conductometer (Demo) • Purification of organic compounds • (recrystallisation)	• Microwave • TLC Plates • UV Spectrophotometer (single wavelength) • HPLC	• Determination of Vitamin C in Lemon • Estimation of food additives in food sample • Hands on use of a conductometer to determine acid content • Ion exchange Method • Introducing column Chromatography • Separation of metal mixtures.	• Digital pH meter • Mono pan balance • TLC Plates (pre coated) • Potentiometer • Conductometer • Spectrophotmeter • Rotary vacuum evaporator
Statistics	• One-Way, wo-way and Factorial ANOVA procedures using different problems. • 1.Non-parametric test. • 2.Clinical trial and Bioequivalence. • 3. Regression Analysis	• Computers and free software, Scientific calculators	• Demonstration of ANOVA procedures using R and SPSS for different case studies with its interpretation and application • Demonstration of all these statistical analysis procedures using R and SPSS for different case studies with its interpretation and application	• PC installed with R and SPSS packages,10 unit license of SPSS software

CURRENT INFRASTRUCTURE & INSTRUMENTS WITH EXPERIMENTS DONE PRESENTLY & PROPOSED

Department	Existing Practical's in Curriculum	Current Infrastructure/ Instruments	Proposed Modification	Proposed Instrumentation
Life sciences	• Iso heme titre • Taxonomical studies of plant and animal species • Study of secondary metabolites of plants	•Microscope •Reference books/ Field trips •Chemical analysis	•Ag-Ab interactions •Digital database for Preserved animals and Urban plant species •Secondary metabolites extraction and profiling	•ELISA Reader •Camera and Laptop •Chromatography Column
Microbiology	•Air Sampling •Identification of Microorganisms •Isolation of DNA and profiling- Demo •Protein estimation	•Solid impingement method (Gravity) •Compound Microscopy and Plate count •Colorimeter	•Environmental Sampling of Air •Microbial characterisation •Separation and isolation of chromosomal and plasmid DNA •Determination of Nucleic acid and Protein content of a cell lysate.	•Portable Air Sampler •Binocular research microscope •Vertical and horizontal Gel Electrophoresis Unit •UV Trans illuminator
Biotechnology	•Protein estimation •Biostatistics •DNA extraction and amplification - DEMO	•Vertical and horizontal Gel Electrophoresis Unit •Textbooks •PCR	•Protein profiling •Bioinformatics/Biostatistics •DNA extraction and amplification from different sources (Hands on)	•Western Blot apparatus •End note software •Microfuge •-20 Deep Freezer •Combs, Truough, Spacers, Power Pack •Micropippetes, Barrier Tips, PCR Mix Columns

PROPOSED MINOR RESEARCH PROJECTS

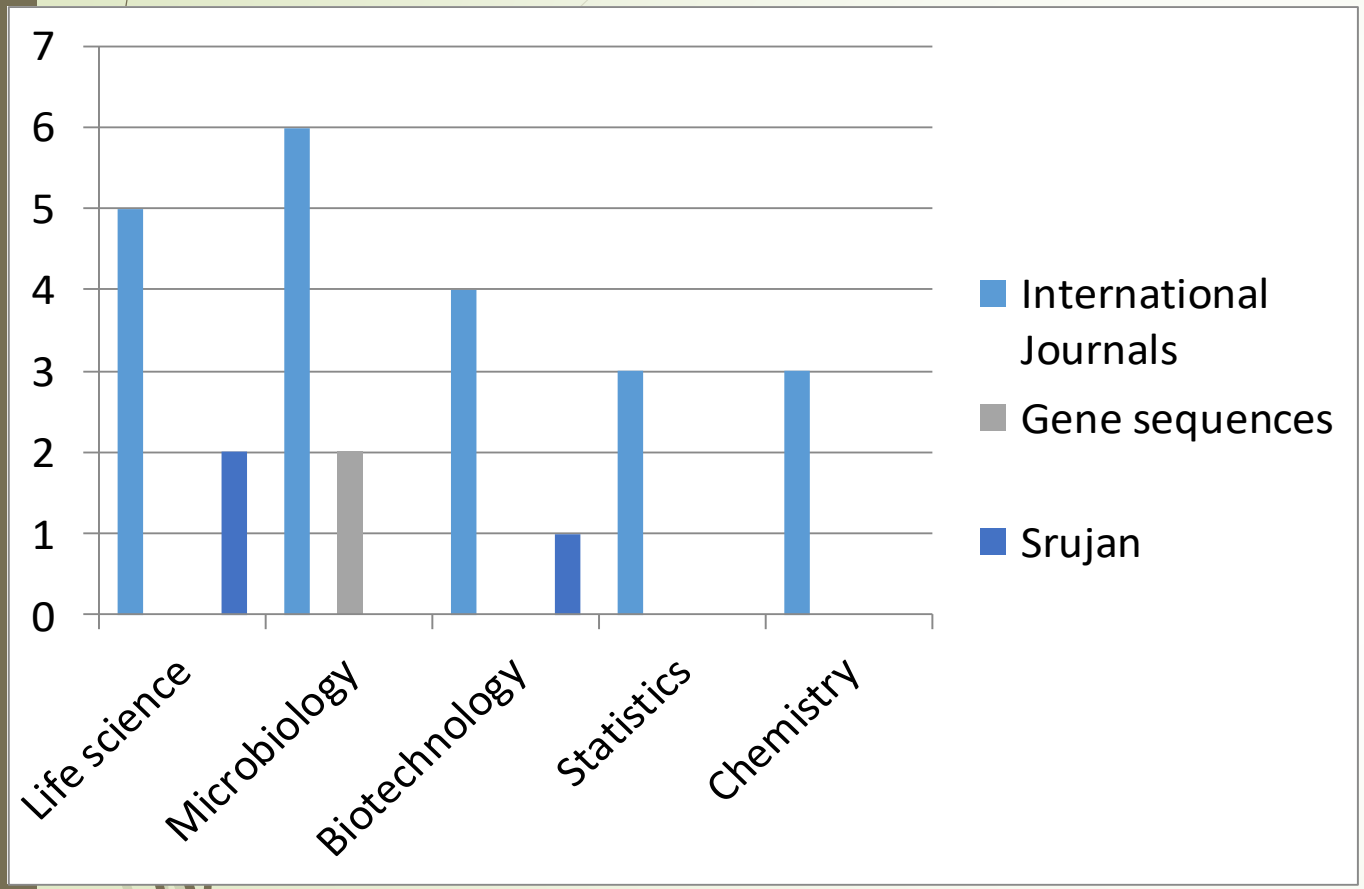
Dept.	Program
Chemistry	1. Analysis of Adulteration in milk, Microbial profiling.
	2. Analysis of fluoride content of Toothpastes and mouth washes.
	3. Mosquito repellant properties of coconut shell and its derivatives.
	4. Preparation of pH indicators from natural sources.
	5. Evaluation of lead content of nail enamel products (Matt finish nail polish).
Statistics	1. Data handling clinical trial studies and role of statistics.
	2. Data analysis of Municipality data (Health, Disease etc.).
	3. Workshop on Data analysis using SPSS.
Life Sciences	1. Green synthesis of nano particles
	2. Chemical fingerprinting of fruit extracts
	3. Screening of genetic disorders in neo natals
	4. An assessment of respiratory health of traffic policemen
Microbiology	1. Aerobic degradation of triphenyl methane dyes using Sphingomonas species.
	2. Identification of b-lactamase producing organisms from natural water bodies.
	3. Identification of genetic determinants of drug resistance in microbes,
	4. Study of horizontal transfer of genes causing antibiotic resistance and their expression.
Biotechnology	1. Bioremediation using plant extracts.
	2. Metabolomic profiles of PNAS in tobacco consumers.
	3. PCOS survey among young adults.

PROPOSED FACULTY IMPROVEMENT PROGRAMMES

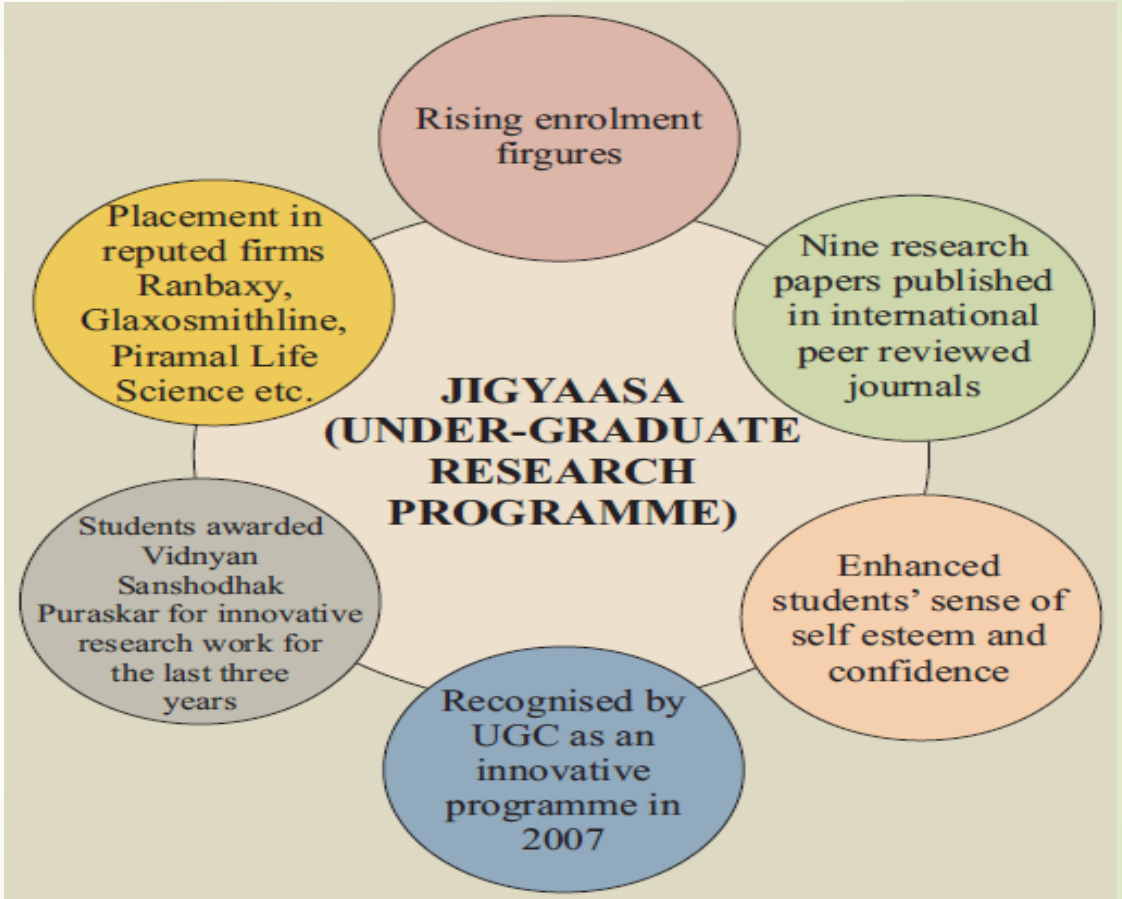
Dept.	Program	Resource person
Life Sciences	1. Workshop on Techniques in developing and maintaining cultures of Model organisms	Dr. Jacinta D'Souza
	2. Workshop on HPTLC	Dr. Avinash Patil
	3. Workshop on Zebra fish Culture	Dr. Yasmin Khan
	4. Workshop on Digital Taxonomy	Dr. Sanjay Deshmukh
Chemistry	1. Building leadership qualities.	H.R. Professional
	2. Seminars on tapping various resources of funding research project.	Dr. Hemlata Bagla
	3. Conducting workshop for improvement in soft skills	Ms. Ritika Pathak
	4. Hands on training with modern Instrumentation like ICP-OES, LASER	Resource person-Industry
	5. Stress Management Program(Yoga)	Mr. Vijay Thigle
Statistics	1. Workshop on clinical trial studies and role of statistics.	Mr. Soumen Roy
	2. Workshop on Data analysis using R and SAS.	Mr. Vinayak Deshpande
	3. Workshop on Data analysis using SPSS.	Dr. S. P. Gite
Microbiology	1. Workshop on Handling Biological data using software tools.	Dr Sonal Dasani, Dr Muley
	2. Workshop on Immunological Techniques	Visting faculty from ACTREC, Kharghar.
Biotechnology	1. Workshop on PCR Handling & Molecular Biology Techniques	Ms. Sharon K.
	2. Workshop on Bioinformatics & Molecular modeling	Dr. Suruchi J., Ms. Alpana Bastikar
	3. Handling and applications: HPLC	Dr. Vijay Dabholkar & Dr. Yogita Shinde

UNDER GRADUATE RESEARCH

The Journey so far...



Evidence of Success



- **21 International UG publications from our JIGYAASA Program**

OUTREACH ACTIVITIES

- **Chemistry**: Upgrading the knowledge of instrumentation and apparatus handling amongst BMC Schools
- **Statistics**: Statistics for Science teachers- ICT Workshop
- **Life Sciences:** To showcase state of the art Museum Specimens/ Digitised version to Schools and Colleges
- **Microbiology:** Water analysis from all water taps/sources in and around institutions
- **Biotechnology**: Awareness of Food additives in schools

THANK YOU

Adoption of Environmentally Safer Alternatives to animal dissections (Clay modeling of brains)

State of the art Infrastructure

Life Sciences Lab

Radio-Chemistry Lab

Auditorium

Library