



JAMAL MOHAMED COLLEGE (Autonomous)

TIRUCHIRAPPALLI, TAMIL NADU

DBT STAR COLLEGE SCHEME ACTIVITIES : 2020-2021

PARTICIPATING DEPARTMENTS : BOTANY, CHEMISTRY, MATHEMATICS, PHYSICS AND ZOOLOGY

INTERDISCIPLINARY GROUP PROJECTS

- BOTANY**
 - Production of eco-friendly cleaning liquids from fruit and vegetable waste using beneficial microbes.
 - Agriculture green development: Recycling of agriculture wastes through edible mushroom cultivation
 - Study on phytochemical properties of medicinal plants with immunomodulatory activities

- CHEMISTRY**
 - Estimation of essential oil content in citrus Peel
 - Detection of chemical additives in Packed Foods
 - Study on presence of pesticides in various fruits, vegetables and green leaves in and around Tiruchirappalli District

- MATHS**
 - Study on advantages and disadvantages of online classes
 - Applications of matrices in cryptography
 - A study on mental wellbeing and education related challenges faced by the students during Covid-19 lockdown in Tiruchirappalli.

- PHYSICS**
 - Design and Development of Home Appliances
 - Assembling of HAM Radio Transmitter
 - Assembling of HAM Radio Receivers

- ZOOLOGY**
 - Evaluation of radioactivity in various building materials.
 - Production of bio fertilizers from fish wastes available from fish market of Tiruchirappalli.
 - Evaluation of anti-mosquito larvicidal activity of plants.

SALIENT FEATURES

- Enrichment of the existing curriculum by implementation of new practical courses
- Interdisciplinary based learning through hands- on trainings workshops, guest lectures, group projects and internship programmes
- Skill enhancement programmes for faculty and laboratory staff members
- Outreach programmes for popularization of science among college and school students and faculty members
- Awareness programmes on Covid - 19 were conducted

INTERNAL AND EXTERNAL ADVISORY COMMITTEE MEETINGS FOR STRENGTHENING THE CURRICULUM AND OTHER ACTIVITIES.



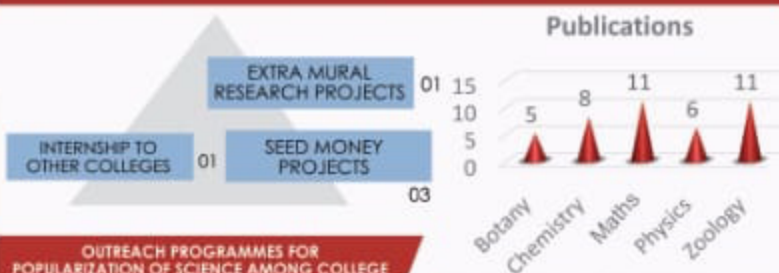
LAB MANUAL PREPARATION FOR EFFECTIVE IMPLEMENTATION OF NEW PRACTICAL COURSES.



INTERDISCIPLINARY BASED LEARNING THROUGH HANDS- ON EXPERIENCE WORKSHOPS, GUEST LECTURES, GROUP PROJECTS AND INTERNSHIP PROGRAMMES



SKILL ENHANCEMENT PROGRAMMES FOR FACULTY MEMBERS



OUTREACH PROGRAMMES FOR POPULARIZATION OF SCIENCE AMONG COLLEGE AND SCHOOL STUDENTS AND FACULTY MEMBERS



DISTRIBUTION OF HAND-SANITIZER TO THE FRONT LINE WORKERS DURING COVID -19 PANDEMIC



INTERDEPARTMENTAL TRAINING

- Fundamental of R Software in Data Analysis (Botany, Chemistry and Zoology)
- Analytical separation techniques (Botany, Chemistry and Zoology)
- Origami and Wealth from Waste (Botany, Chemistry, Physics and Zoology)
- Remote sensing and GIS data analysis (Botany, Chemistry, Physics and Zoology)
- Servicing of Electronic Gadgets and Home Appliances (Botany, Chemistry, Physics and Zoology)

INVITED LECTURES

BOTANY

- Essentials in research and how to do student group projects.
- Research and entrepreneurship possibilities for budding graduates.
- Mathematics in nature — the golden secret of shapes and pattern.
- Plant tissue culture technology for seed industries.
- Promising wealth creation initiative through Borassus flabellifer plantation to uplift the livelihood of rural community.
- Understanding the molecular mechanism of agarwood wood formation.
- Ethylene involvement in pollen grains thermo tolerance mechanisms
- Breast cancer and its effective diagnosis from breath.
- Phytochemistry and its applications.
- Vertical farming and hydroponics.
- Biofuel — green energy.
- Diversity and biotechnological potentials of mushrooms.

CHEMISTRY

- Analytical separation techniques.
- Strategies to identify medicinally potent compounds from plants
- Soil nutrient analysis.

MATHS

- Indian science: Covid 19 scenario.
- Small world phenomenon.
- Introduction to group projects.
- Applications of sagemath software.
- Application of Mathematics in Digital Era.
- Use of Mathematics in detecting diseases.
- Application of Operations Research in the real life situations.

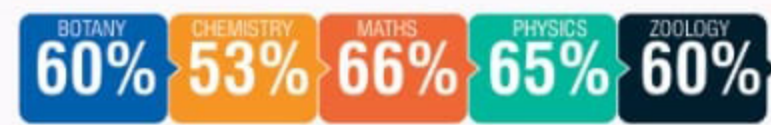
PHYSICS

- Leader in yourself.
- Experimentation techniques.
- Our universe.
- Circuit and other simulation tools.
- Role of motivation in life.
- Open source computational packages.
- Scientific drawing tools.
- Presentation and slide show tools.

ZOOLOGY

- Covid-19 : Break the chain.
- Fermentation technology.
- Vaccine technology.
- Entomopathogenic fungi.
- Darwin's legacy and modern science.

STUDENTS CUT OFF%



NO. OF STUDENTS OPTING FOR PG



INDUSTRIAL / INSTITUTIONAL VISIT

- Science Instrumentation Centre, Bharathidasan University, Trichy.
- National Repository for Microalgae and Cyanobacteria, Bharathidasan University, Trichy
- Floriculture unit, Hosur
- Tropical Butterfly Conservatory, Trichy.
- Periyar Manniammai University, Thanjavur
- Indian Institute of Food Processing Technology, Thanjavur
- Himalayan Aquaculture Farm and feed production unit, Thanjavur

HANDS ON TRAINING

- Plant Genomic DNA isolation, PCR Amplification and Agarose Gel Electrophoresis
- Methods of field sample collection using Mobile GPS
- Poly-house, Green-house and net house & Cultivation and Commercialization of flower and vegetable crops
- Microalgal biodiversity, biomass production and its applications.
- Plant collection, processing and herbarium preparation

BOTANY

- Methods of Expression of Concentration
- Analytical separation techniques
- Principle and instrumentation of IR spectroscopy
- Application of Avadro software
- Applications of Chemdraw software
- Principle and instrumentation of UV visible spectroscopy
- Water Treatment using polymer based materials

CHEMISTRY

- Hands on Training programme on SPSS
- Hands on Training programme on R
- Hands on Training programme on Maple software
- Hands on Training programme on Mathematica software

MATHS

- Origami and Wealth from waste
- Remote Sensing and GIS data analysis
- Servicing of electronic gadgets and home appliance
- Skill Development using Learning Assistance Tools
- Training Programme on LATEX

PHYSICS

- Microtechniques
- Histological studies in animal cells
- Electrophoresis for animal samples
- Vermi technology

ZOOLOGY

FACULTY TRAINING FOR SKILL DEVELOPMENT



EXHIBITION / SEMINAR



NEW EXPERIMENTS INTRODUCED

