



GOVERNMENT OF MAHARASHTRA
DEPARTMENT OF HIGHER & TECHNICAL EDUCATION
INSTITUTE OF SCIENCE, AURANGABAD
(Post Graduate Education & Research Institute)
Phone: (0240) 2400586, 2400598 Fax: (0240) 2400103
e-mail: director@inosca.org Web-site: www.inosca.org

The Government Institute Of Science, Aurangabad is

- The only Post graduate and Research Institute in Marathwada region, established by Department of Higher Education, Govt. of Maharashtra on Aug. 14, 1974.
- The Institute is Government Funded and Affiliated to Dr. Babasaheb Ambedkar Marathwada University, Aurangabad.
- The institute is well known for its commitment to education and has given many eminent students who have niched their name in the research field.
- The sole crux of starting this Institute was to provide higher education to students belonging to this under privileged region of Maharashtra so as to enable them to compete at global level.

Programs undertaken by the Institute

➤ **M.Sc.**

Biophysics (with specializations as mentioned in syllabus)
Biotechnology
Botany (with specialization in Applied Mycology, Medicinal Botany & Pharmacognosy)
Geology
Microbiology

➤ **Ph.D.**

Biophysics
Biotechnology
Botany
Geology
Microbiology

M.Sc. ADMISSION NOTICE 2017-2018

Applications are invited for admission to M.Sc. in following subjects

1. **Biophysics** 2. **Biotechnology** 3. **Botany** 4. **Geology** 5. **Microbiology**

**Admission to all subjects is through University Common Entrance Test To Be held by
Dr Babasaheb Ambedkar Marathawada University, Aurangabad**

Subject	Intake Capacity	Eligibility criteria Minimum qualifying marks: 45% marks in qualifying degree (40% for reserve category)
Biophysics	20 Seats	All Science graduates OR B. Pharm. OR B.Sc. Agri. OR B.Sc. Biotechnology/ Bioinformatics
Biotechnology	20 Seats	All Science graduates OR B.Pharm OR B.Sc. Agri. OR B. Sc Biotechnology/ Bioinformatics
Botany	20 Seats	B.Sc. Degree with Botany as one of the optional subjects
Geology	20 Seats	B.Sc. Degree with Geology as one of the optional subjects
Microbiology	20 Seats	B.Sc. Degree with Microbiology as one of the optional subjects

Perspective Features

- In-plant & on the job training ventures in related industries/labs
- Activities of Industry-Institute Co-ordination Council
- Skill Development Initiatives in concerned subjects
- Result oriented coaching for NET/SET/GATE/GRE/ICMR/DBT/MPSC/UPSC
- Green and CLEAN Initiatives for Environment Protection
- Functional Placement & Training Cell
- Minimum fees as per Govt. norms
- Reaccredited by NAAC with CGPA 2.74

Academic Features & Infrastructure facilities

- Well equipped spacious laboratories & lecture halls and research facilities
- Highly enriched Library with Wi-Fi facility
- Girls Hostel & Boys Hostel
- Computational & Internet Facility
- Scholarships for Deserving students
- MPSC Selected, experienced & qualified faculty
- Strong alumni Interaction & support
- Financial Support from DST-FIST scheme

Director's address:

Dr. Mrs. Hemlata J Wankhede ,
Director
Govt. Institute of Science, Nipat Niranjan Nagar,
Aurangabad Caves Road,
Aurangabad - 431004 (M.S.) INDIA.
Ph.: +91 (0240) 2400586,2400598 Telefax: +91 (0240) 2400103
e-mail: director@inosca.org Web-site: www.inosca.org

Heads of the Departments –

Biotechnology : Dr. Mrs. Hemlata J Wankhede
Biophysics : Mr. Satish. G. Kulkarni
Botany : Prof. Mrs. Sahera Nasreen
Geology : Dr. Kamalakar M. Wanjarwadkar
Microbiology : Dr. Aniroodha V. Pethkar
Librarian : Dr. Mrs. S.P. Bidarkar

Profile

The Government Institute Of Science, Aurangabad, **Maharashtra (India)**

- The Institute was established on 14th August 1974. The only Post Graduate and Research Institute in Marathwada region of Maharashtra.
- The Institute is located at the foothills of Satpuda Mountain Range and the famous Aurangabad Caves of the World famous Caves of Ajanta – Ellora era. It is sprawled over an area of 25 acres in the pollution free environment. The backdrop of Bibi-ka-Maqbara [replica of Taj Mahal] gives the picturesque surroundings, providing a refreshing ambience stimulating the intellectual perspective, creativity and desire for teaching and learning activities
- It is a Government Funded and Recognized Institute and affiliated to **Dr. Babasaheb Ambedkar Marathwada University, Aurangabad** and managed by **Government of Maharashtra through Director of Higher Education, Pune.**
- Institute is imparting training in subjects viz.
 - Microbiology
 - Biophysics
 - Botany (with specialization in Applied Mycology, Medicinal Botany & Pharmacognosy)
 - Geology
 - Biotechnology
- The curricula is designed keeping in view of producing work force / human resource to cater to the local needs of various industries.
- The Institute is recognized by **UGC Under 2f (5 th Jan, 1980) and 12B (3 rd Sep, 1985)**
- The sole crux of starting this Institute was to provide higher education to students belonging to this under privileged region of Maharashtra.
- Institute is also a pioneer in introducing M.Sc. Biophysics, Geology, Microbiology and Biotechnology and M.Sc. Botany with specialization in Medicinal Plant , Ethno botany, Pharmacognosy and Applied Mycology in Marathwada region.

Goals

- To fulfil the backlog of higher education of the region in the emerging areas of science.
- To cater higher education and training in front-line areas of science, that will have strong vocational value and job potential.
- To generate human resources, so as to fulfill the local needs of industrial growth.
- To enable the students of Marathwada region to enter into national level competition in the field of Science and Technology.
- To impart quality and value-based education.
- To help the students to discover and tap their fullest potential while becoming properly integrated personalities, who will emerge as responsible and productive citizens of India.
- To consciously gear all its academic activities to sustainable environmental practices encompassing land, water and its flora and fauna.
- To transfer the technology from laboratory to field.
- To extend the expertise services to solve the local problems relating to agriculture and industries.
- To propagate and to make awareness of science education.



Vision

Government Institute of Science Aurangabad will be world class Science Institution, pursuing for academic and scientific excellence, catering to the needs of global community, striving for its harmonious development by inculcating life long learning skills to serve for the socio-economic development having concern for ecology and social harmony.

Mission

- To develop citizens with scientific temperament, moral and ethical values and multifaceted proactive personality by providing quality education.
- Government Institute of Science will very soon opt for autonomy.
- Institute will evolve system(s) to provide quality education to suit local, regional, National needs and needs that will arise due to globalization.
- Institute will grow in multi directions with innovative approaches to serve community at large in front line areas in this new millennium in the field of Science and Technology.
- The Institute will provide practical based training to cater the needs of the industries.
- To develop and strengthen industry-Institute participation directly in teaching, learning processes and financial aspects of the Institute.
- To start the new departments that will suit our goals, mission and objectives.

Institutional Infrastructure

The infrastructure facilities include :

1. Administrative Building with Meeting Hall

2. Departments :- In Three Buildings

(G+1 Construction, One Floor allotted for each of One Department)

In each Department Physical Infrastructure includes:

Two Labs. admeasuring 40 x 30 ft. for M.Sc. I and II

One Research Lab. admeasuring 40 x 30 ft.

One Instrumentation Lab. admeasuring 30 x 20 ft.

Two Lecture Halls, 25 x 25 ft., 30 x 20 ft.

One Professor's Cabin, 25 x 15 ft.

One Professor's Lab. 25 x 15 ft.

One Associate Professor's Lab. 25 x 15 ft.

One Assistant Professor's Common Room 25 x 20 ft.

One Girl's Common Room 30 x 15 ft.

One Boy's Common Room 30 x 15ft.

One Staff Room 25 x 20 ft.

One Store Room 40 x 25 ft.

One Reading cum Departmental Library 30 x 15 ft.

One Dark Room cum Photography Room 25 x 25 ft.

3. Library Building :-The institute has a separate spacious library building with adequate facilities.

4. Hostels :-

One– Govt Institute Girls Hostel (Capacity 60, Occupancy one per room)

One– Minorities Girls Hostel (Capacity 100, Occupancy Three per room)

One– Govt Institute Boys Hostel (Capacity 60, Occupancy One per room)

The hostel buildings have entertainment hall, mess facility, dining hall and kitchen. A rector quarter is also available in the premises of girl's hostel. The Minorities Girls Hostel has mess facility, dining hall and kitchen and separate computer room.

5. Director's Bungalow: Residential accommodation of Director

6. Multipurpose Hall/Auditorium :- The Multipurpose hall with four hundred seat capacity in the Institute campus is being used to organize Seminars / Conferences / Annual Social Gathering / Science Week celebrations and other guest lectures. It is also used for in-door games such as badminton, table tennis, chess, carom etc.

7. Guest House

8. Quarters for Class IV Employees and

9. A wide Spread Play Ground

10. Botanical garden along with greenhouse and polyhouse facility

Unique Facilities and Instruments Available in the Institute

Gamma Irradiation Facility – Gamma Chamber 900- A Cobalt-60 Radioisotope

Physiological Data Acquisition System

Thermal Cycler (PCR System)

GEL Documentation System

Microprocessor based Fermenter

Microprocessor based BOD Analyzer

Microprocessor Based pH Analyzer

UV-VIS Spectrophotometer (PC based and Microprocessor Based)

Microprocessor Based CO₂ Incubator

PC Based Thermoluminescence Analyzer

Ultrasonic Interferometer

Vertical and Submerged Gel Electrophoresis Units

DNA Sequencer

Dark Field Microscope

Phase Contrast Microscope

Polarizing Microscope

Atomic Absorption Spectrophotometer

Inverted Microscope with photographic attachment

Rotary Evaporator

Plant Tissue culture facility

Herbarium and Plant Museum

Computer Facilities in all dept.

UGC-Network Research Centre

DST-FIST Facilities

- **Computer lab with Internet facility**
- **Microbial Identification System**
- **Nano-spectrophotometer**
- **High Performance Liquid Chromatography**

Programs

Programs undertaken by the Institute:

M.Sc.

Biophysics [with specializations]

Biotechnology

Botany[with specialization in Applied Mycology,

Medicinal Botany & Pharmacognosy]

Geology

Microbiology



Ph.D.

Biophysics

Biotechnology

Botany

Geology

Microbiology

Biophysics

Course Details:

Program : M.Sc.

Level : Post Graduate (2 years i.e. Four semesters) CBC&GS pattern

Eligibility:

- B.Sc. Degree with one of the following subjects as optional: Chemistry, Botany, Zoology, Microbiology, Physics, Mathematics, Electronics, Biochemistry & Biotechnology **OR**
- B. Pharm. **OR** B.Sc. (Agriculture/Agricultural Biotechnology)
- B.Sc. Integrated in Biotechnology / Bioinformatics.
- Minimum 45% marks (40% for reserved category)



Intake capacity (Admission Through PG-CET) : M.Sc. I yr. – 20 & M.Sc. II yr. – 20

Program : Ph.D. Level : Doctoral Cut-off marks at entry level in % : II class at M.Sc.

Intake capacity : Depending upon vacancies available and through PET exam allotment.

Teaching Staff

Name	Designation	Email ID
Mr. Satish G. Kulkarni	Associate Professor & Head of the Department	biophysgk@gmail.com
Dr. Mrs. A.S.Vinchurkar	Associate Professor	arunavinchurkar@gmail.com
Mrs. Vaishali. N. Wadekar	Assistant Professor	vaishaliwadekar@yahoo.com

Syllabus M.Sc. Biophysics CBC&GS pattern [Total credits 100;(96 subject+4 service course)]

Paper No.	Title of the Theory Paper		Credits	Marks	Practical Paper	Credits	Marks
		Semester I CBC&GS pattern					
BPT-101	Molecular Biophysics		3	80 UA+20CA	BPP-111	3	50UA
BPT-102	Biophysical Chemistry		3	80 UA+20CA			
BPT-103	Cellular Biophysics		3	80 UA+20CA	BPP-112	3	50UA
BPT-104	Molecular Enzymology		3	80 UA+20CA	BPP-113	3	50UA
BPT-105	Biostatistics & Computer fundamentals		1	80 UA+20CA	BPP-114	3	50UA
		Semester II CBC&GS pattern					
BPT-201	Physiology & Biophysics		3	80 UA+20CA	BPP-211	3	50UA
BPT-202	Membrane & Ion Channel Biophysics		3	80 UA+20CA			
BPT-203	Physico-chemical Techniques		3	80 UA+20CA	BPP-212	3	50UA
BPT-204	Molecular Genetics & Advanced Molecular Biology		3	80 UA+20CA	BPP-213	3	50UA
BPT-205	Research Methodology & Communication		1		BPP-214	2	50UA
		Semester III CBC&GS pattern					
BPT-IX	Biophysical & Bio-analytical Techniques.		3	80 UA+20CA	BPP-311	3	50UA
BPT-X	Immunology & Immunotechniques		3	80 UA+20CA			
BPT-XI	Elective A-[One from the list below]		3	80 UA+20CA	BPP-312	3	50UA
BPT-XII	Elective B-[One from the list below]		3	80 UA+20CA	BPP-313	3	50UA
BPMP-III	Mini-project		3		BPP-314	3	100UA+50CA
Electives A		1.Electrophysiology 2. Protein Engineering 3. Environmental Biophysics					
Electives B		1. Photo biophysics 2. Cellular & Molecular Neurophysiology 3. Recombinant DNA technology					
		Semester IV CBC&GS pattern					
BPT-XIII	Bioinformatics & Structural Biophysics		3	80 UA+20CA	BPP-411	3	50UA
BPT-XIV	Radiation Biophysics		3	80 UA+20CA	BPP-412	3	50UA
BPT-XV	Elective B-I[One from the list below]		3	80 UA+20CA	BPP-413	3	50UA
BPT-XVI	Elective B-II[One from the list below]		3	80 UA+20CA	BPP-414	3	50UA
BPSC	Service course in other Department		4	80 UA+20CA			
Electives C		1.Medical Biophysics 2. Genomics & Proteomics 3. Neurobiophysics					
Electives D		1.Bioelectronics & Medical Instrumentation 2.IPR, Bioethics & Biosafety 3.Molecular Modelling & Drug Designing					

Research Programs

Research activities are being pursued in the following disciplines :

- Radiation Biophysics & Radiobiology
- Macromolecular Interactions
- Enzymology & Enzyme Technology
- Electrophysiology & Medical Biophysics
- Ultrasonic Biophysics



Biotechnology

Course Details:

Program : M.Sc.

Level : PG (2 years)

Eligibility :

- All Science Graduates / B.Pharm. / B.Sc. (Agri.)
- Admission through Entrance Examination.
- Date of Entrance Examination will be notified.
- Minimum 45% marks (40% for reserved category)

Intake capacity (Admission Through Merit) :

M.Sc. I yr : 20 & M.Sc.II yr : 20



Program : Ph.D. **Level :** Doctoral **Cut-off marks at entry level in % :** II class at M.Sc.

Intake capacity : Depending upon vacancies available and through PET exam allotment.

Teaching Staff

Name	Designation	Email ID
Dr. Mrs H. J. Wankhede	Head of The Department	hjwankhede@gmail.com
Mr. Harris P. Pannakkal	Assistant Professor	_harris2010@rediffmail.com
Dr. Mayavati N.Chavan	Assistant Professor	patilms2004@yahoo.co.in
Dr. Rahul P. Bhagat	Assistant Professor	rahulbhagat2006@gmail.com
Mr. Inderchand R. Gupta	Assistant Professor	inderchandgupta@gmail.com
Ms. Pooja M. Sonawane	Assistant Professor	sonagrapooja3@gmail.com

Syllabus

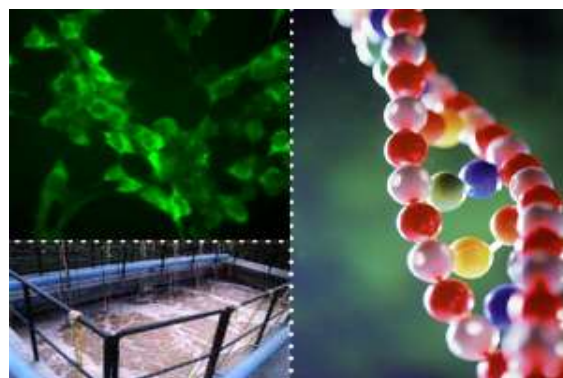
Paper No.	Title of the Theory Paper	Credits	Marks	Practical Paper	Credits	Marks
Semester I						
BT-1001	Biostatistics & Biomathematics	4	80 UA+20CA	BTP-1001	2	50UA
BT-1002	Bioenergetics & Biomolecules	4	80 UA+20CA	BTP-1002	2	50UA
BT-1003	Microbiology	4	80 UA+20CA	BTP-1003	2	50UA
BT-1004	Inheritance Biology	4	80 UA+20CA	BTP-1004	2	50UA
Semester II						
BT-2001	Molecular Biology	4	80 UA+20CA	BTP-2001	2	50UA
BT-2002	Enzyme Technology	4	80 UA+20CA	BTP-2002	2	50UA
BT-2003	Cell Biology	4	80 UA+20CA	BTP-2003	2	50UA
BT-2004	Basic Immunology	4	80 UA+20CA	BTP-2004	2	50UA
Semester III						
BT-3001	Applied Immunology and Virology	4	80 UA+20CA	BTP-3001	2	50UA
BT-3002	Gene Expression and Engineering	4	80 UA+20CA	BTP-3002	2	50UA
BT-3003	Developmental Biology	4	80 UA+20CA	BTP-3003	2	50UA
BT-3004	Bioinstrumentation	4	80 UA+20CA	BTP-3004	2	50UA
Semester IV						
BT-4001	Industrial Technology	4	80 UA+20CA	BTP-4001	2	50UA
BT-4002	Recombinant DNA Technology	4	80 UA+20CA	BTP-4002	2	50UA
BT-4003	Tissue Technology	4	80 UA+20CA	BTP-4003	4	100UA
BT-4004	Bioinformatics	4	80 UA+20CA	Dissertation		

Research

Programs

Research activities are being pursued in the following disciplines:

- Enzymes in Process Development
- Enzymes in Bioremediation
- Enzymes in Therapeutics
- Strain Improvement through Recombinant DNA Technology
- Drug Designing for MDR Strains



Course Details:

Program : M.Sc.

Level : PG (2 years)

Eligibility :

- B.Sc. Degree with Botany as one of the optional.
- Minimum 45% marks (40% for reserved category)

Intake capacity (Admission Through Merit) :

M.Sc. I yr : 20 & M.Sc. II yr : 20



Program: Ph.D. Level: Doctoral

Cut-off marks at entry level in % : II class at M.Sc. and as per Dr B.A.M.U. resolutions

Intake capacity: Depending upon vacancies available and through PET exam allotment.

Teaching Staff

Name	Designation	Specialization	Email ID
Dr. Sahera. Nasreen	Professor & Head	Applied Mycology & Plant Pathology	saheranasreen@gmail.com
Dr. Abhay N. Salve	Associate Professor	Algae & Plant Ecology	abhaysalve@hotmail.com
Ms. Vanashree J. Parsodkar	Assistant Professor	Palynology	_Janflower4@gmail.com
Dr. Mohnish N. Bokhad	Assistant Professor	Molecular Biology & Taxonomy	mob2551322@gmail.com
Mr. Vinod W. Patil	Assistant Professor	Mycology	vwpatil@gmail.com

Syllabus

Paper No.	Title of the Theory Paper	Credit	Marks	Practical Paper	Credit	Marks
Semester I						
BOT 401	Cell Biology	4	80 UA+20CA	BOT 401P	2	50UA
BOT 402	Molecular Biology	4	80 UA+20CA	BOT 402P	2	50UA
BOT 403	Biology and Diversity of Viruses, Bacteria and Fungi	4	80 UA+20CA	BOT 403P	2	50UA
BOT 404	Taxonomy of Angiosperm	4	80 UA+20CA	BOT 404P	2	50UA
	Seminars and Tutorial					
Semester II						
BOT 405	Cytology and Genetics	4	80 UA+20CA	BOT 405P	2	50UA
BOT 406	Plant Development and Reproduction	4	80 UA+20CA	BOT 406P	2	50UA
BOT 407	Biotechnology	4	80 UA+20CA	BOT 407P	2	50UA
BOT 408	Plant Physiology and Metabolism	4	80 UA+20CA	BOT 408P	2	50UA
	Seminars and Tutorial					
Semester III						
BOT 501	Biology and Diversity of Bryophytes, Pteridophytes and Gymnosperms	4	80 UA+20CA	BOT 501P	2	50UA
BOT 502	Ecology and Conservation	4	80 UA+20CA	BOT 502P	2	50UA

BOT 521 A BOT 521 B BOT 521 C BOT 521 D BOT 521 E BOT 521 F	Crop Genetics and Plant Breeding - I Plant Pathology-I Taxonomy of Angiosperms - I Advanced Plant Physiology and Biochem. – I Applied Mycology-I Plant Biodiversity-I	4	80 UA+20CA	BOT 521-A P BOT 521-B P BOT 521-C P BOT 521-D P BOT 521-E P BOT 521-F P	2	50UA
BOT 522 A BOT 522 B BOT 522 C BOT 522 D BOT 522 E BOT 522 F	Crop Genetics and Plant Breeding - II Plant Pathology-II Taxonomy of Angiosperms - II Advanced Plant Physiology and Biochem. II Applied Mycology-II Plant Biodiversity-II	4	80 UA+20CA	BOTP 522 A BOTP 522 B BOTP 522 C BOTP 522 D BOT 522-E P BOT 522-F P	2	50UA
	Project Work	3				
Service Course	Plant Tissue Culture	4	80 UA+20CA			
Semester IV						
BOT 504	Bioprospecting and Plant Resource Utilization	4	80 UA+20CA	BOT 504 P	2	50UA
BOT 505	Genetic Engineering and Bioinformatics	4	80 UA+20CA	BOT 505 P	2	50UA
BOT 523 A BOT 523 B BOT 523 C BOT 523 D BOT 523 E BOT 523 F	Advanced Genetics & Molecular Biology – I Plant Pathology – III Taxonomy of Angiosperms – III Plant Physiology – III Applied Mycology-III Plant Biodiversity-III	4	80 UA+20CA	BOT 523-A P BOT 523-B P BOT 523-C P BOT 523-D P BOT 523-E P BOT 523-F P	2	50UA
BOT 524 A BOT 524 B BOT 524 C BOT 524 D BOT 524 E BOT 524 F	Advanced Genetics & Molecular Biology – II Plant Pathology – IV Taxonomy of Angiosperms – IV Advanced Plant Physiology -IV Applied Mycology-II Plant Biodiversity-II	4	80 UA+20CA	BOT 524-A P BOT 524-B P BOT 524-C P BOT 524-D P BOT 524-E P BOT 524-F P	2	50UA
	Project Work	4				50UA

Research Programs

Research activities are being pursued in the following disciplines:

- Mycology
- Pesticide Management
- Pharmacognosy
- Aero Mycology
- Plant Physiology and Agronomy
- Cyto-genetics
- Plant Pathology
- Plant Anatomy &Taxonomy
- Algology



Geology

Course Details:

Program : M.Sc.

Level : PG (2 years)

Eligibility :

- B.Sc. Degree with Geology as one of the optional.
- Minimum 45% marks (40% for reserved category)

Intake capacity (Admission Through Merit) : M.Sc. I yr.: 20 & M.Sc. II yr.: 20

Program : Ph.D. **Level : Doctoral** **Cut-off marks at entry level in % :** II class at M.Sc.

Intake capacity : Depending upon vacancies available and through PET exam allotment.

Teaching Staff

Name	Designation	Email ID
Dr. Kamlakar M. Wanjarwadkar	Associate Professor & Head of The Department	kamlakargsi@yahoo.co.in
Dr. Mohan A. Sonar	Assistant Professor	drmohansonar398@gmail.com

Syllabus

Paper No.	Title of the Theory Paper	Credits	Marks	Practical Paper	Credits	Marks
Semester I						
CCGL 101	Mineralogy and Crystallography	4	80 UA+20CA	CCGL 105	2	50UA
CCGL 102	Stratigraphy and Palaeontology	4	80 UA+20CA	CCGL 106	2	50UA
CCGL 103	Structural Geology and Tectonics	4	80 UA+20CA	CCGL 107	2	50UA
CCGL 104	Sedimentary Petrology	4	80 UA+20CA	CCGL 108	2	50UA
Semester II						
CCGL 201	Igneous Petrology	4	80 UA+20CA	CCGL 205	2	50UA
CCGL 202	Metamorphic Petrology	4	80 UA+20CA	CCGL 206	2	50UA
CCGL 203	Geochemistry	4	80 UA+20CA	CCGL 207	2	50UA
CCGL 204	Ore Geology, Instrumentation and Analytical Techniques	4	80 UA+20CA	CCGL 208	2	50UA
Semester III						
CCGL 301	Hydrogeology	4	80 UA+20CA	CCGL 305	2	50UA
CCGL 302	Fuel Geology	4	80 UA+20CA	CCGL 306	2	50UA
CCGL 303	Geophysical Exploration	4	80 UA+20CA	CCGL 307	2	50UA
CCGL 304	Geomorphology, Remote Sensing and GIS Or Quaternary Geology and Applied Micropalaeontology	4	80 UA+20CA	CCGL 308	2	50UA
Semester IV						
CCGL 401	Environmental Geology	4	80 UA+20CA	CCGL 405	2	50UA
CCGL 402	Engineering Geology	4	80 UA+20CA	CCGL 406	2	50UA
CCGL 403	Mining Geology	4	80 UA+20CA	CCGL 407	2	50UA
CCGL 404	Statistical Geology and Computer applications in Geology and Research Methods Or Physics and Chemistry of Earth	4	80 UA+20CA	CCGL 408	2	50UA

Research Programs

Research activities are being pursued in the following subjects -

- Sedimentary Petrology
- Hydrogeology (Ground Water Exploration & Ground Water Quality)
- Environmental Geology
- Palaeontology



Microbiology

Course Details:

Program : M.Sc.

Level : PG (2 years)

Eligibility :

- B.Sc. Degree with Microbiology as one of the optional.
- Minimum 45% marks (40% for reserved category)

Intake capacity (Admission Through Merit) :

M.Sc. I yr : 20 & M.Sc.II yr : 20



Program : Ph.D.

Level : Doctoral

Cut-off marks at entry level in % : II class at M.Sc.

Intake capacity : Depending upon vacancies available and through PET exam allotment

Teaching Staff

Name	Designation	Email ID
Dr. A. V. Pethkar	Associate Professor & Head of The Department	avpethkar@yahoo.com
Dr. Smita M. Dharmadhikari	Associate Professor	dharmadhikarismita1@gmail.com
Dr. Mrs. Swati A. Peshwe	Associate Professor	swatipeshwe@rediffmail.com
Dr. Ajay G. Jadhav	Assistant Professor	akgjadhav@yahoo.co.in
Dr. Jayshree S. Bhuktar	Assistant Professor	jaybhuktar@gmail.com

Syllabus

Paper No.	Title of the Theory Paper	Credits	Marks	Practical Paper	Credits	Marks
Semester I						
Th-I	Biostatistics Computer Applications and Research Methodology	4	80UA+20CA	P-I	2	50UA
Th-II	Bioenergetics and Enzymology	4	80UA+20CA	P-II	2	50UA
Th-III	Bioinstrumentation Techniques and Applications	4	80UA+20CA	P-III	2	50UA
Th-IV	Industrial Food and Dairy Microbiology	4	80UA+20CA	P-IV	2	50UA
Semester II						
Th-V	Recent trends in Virology	4	80UA+20CA	P-V	2	50UA
Th-VI	Molecular Immunology	4	80UA+20CA	P-VI	2	50UA
Th-VII	Microbial Physiology	4	80UA+20CA	P-VII	2	50UA
Th-VIII	Microbial diversity and Extremophiles	4	80UA+20CA	P-VIII	2	50UA
Semester III						
Th-IX	Enzyme Technology	4	80UA+20CA	P-IX	2	50UA
Th-X	Bioprocess Engineering and Technology	4	80UA+20CA	P-X	2	50UA
Th-XI	Microbial Genetics	4	80UA+20CA	P-XI	2	50UA
Th-XII	Environmental Microbial Technology	4	80UA+20CA	P-XII	2	50UA
Semester IV						
Th-XIII	Recombinant DNA Technology	4	80UA+20CA	P-XIII	2	50UA
Th-XIV	Fermentation Technology	4	80UA+20CA	P-XIV	2	50UA
Th-XV	Bioinformatics, Microbial Genomics and Proteomics	4	80UA+20CA	P-XV	2	Project=100UA
Th-XVI	Pharmaceutical Microbiology	4	80UA+20CA	P-XVI	2	

*Semester IV practical (P-XV and P –XVI) or a research project of 100 marks.

Research Programs

Research activities are being pursued in the following subjects -

- Molecular Enzymology
- Nanobiotechnology
- Bioremediation of Environmental and Industrial toxicants
- Multiple drug resistance
- Bioprocess Engineering



Fees: Fees for the M.Sc. Course are as follows

Govt. Fees in Rs.	Non-Govt. Fees in Rs.	University Fees in Rs.
Tution fees - 1000/-	1.Student council - 50/-	1. e-Facilty - 50/-
Admission fees - 25/-	2.Gymkhana - 15/-	2. N.S.S. - 10/-
Laboratory fees - 300/-	3.Medical Examination - 15/-	3. Disaster(Apatkalin) - 20/-
	4.Library - 50/-	4. Sports - 50/-
	5.Institute Examination - 25/-	5. Students welfare - 20/-
	6.Gathering - 50/-	6. Ashwamegh - 04/-
	7.Identity Card - 20/-	7. Avishkar - 04/-
	8.Magazine - 75/-	8. Indradhanush - 04/-
	9.S.A.F. - 10/-	9. Avahan - 04/-
	10.Sports - 50/-	10. Abhiyan fees - 04/-
	11.Students welfare - 10/-	11. University - 05/-
	12.Caution Money - 50/-	12. Vasantrao kale Swabhiman Shikshan Yojana (Earn & learn) -10/-
	13.Library Deposit - 50/-	13. Yuvak Mahotsav -50/-
Total = Rs.1325/-	Total = Rs.470/-	Total = Rs.235/-
	Total = Rs.2030/-	

- Foreign students on admission will have to pay the amount of tuition fees as prescribed by the University.
- Caution Money and Library Deposit are refundable when the student leaves the Institute on getting NOC from the concerned Department. A student should apply for refund of the same within one complete year, after he/ she actually leaves the Institute either by obtaining the leaving certificate or by informing in writing of his/ her intention to leave the Institute. Or within one complete financial year after the date of successful completion of the course, whichever is earlier.
- Caution Money and Library Deposit if not claimed by the student within the prescribed time limit will be forfeited.
 - A student discontinuing studies for the M.Sc. course is required to give satisfactory reasons for doing so, otherwise the tuition fees and Library deposit are liable to be forfeited.
- Various types of scholarships
 - ☐ Government of India scholarships
 - ☐ National Loan Scholarship
 - ☐ Open Merit Scholarship
 - ☐ Eklavya Merit Scholarship
 - ☐ EBC (Fee Concession)
 - ☐ PTC (Fee Concession)
 - ☐ UGC Postgraduate Indira Gandhi Scholarship scheme for single girl child

Library



Library is the 'Heart' of the Institute. College Library has its own importance in higher education. It helps in widening the range of knowledge to users.

Library plays a vital role in teaching and learning process. With the initial collection of 301 books Library established in 1974. It is shifted in separate library building in the year 1997. The Foundation Stone of separate library building was laid on 8th March 1997 with the auspicious hands of Hon. Minister Dattaji Rane, Dept. Of Higher and Technical Education, Govt. of Maharashtra.

Application of Information Technology: Internet Facility was started in the year 2009. Internet Lab was Inaugurated by Dr D.K.Veer, Librarian, Dr Babasaheb Ambedkar Marathwada University, Aurangabad on 9th February 2016. Four Computers have been installed for students & Research scholars to access internet & online Resources etc. SOUL 2.0 Version which is launched by INFLIBNET, Apex body of UGC, is used for the automation of the library.

AIMS AND OBJECTIVES OF THE LIBRARY

- To support to library users for achieving the Goal of the Institute
- To provide right information to Readers at right time
- To encourage the students to develop the habit of self-study
- To mentor Readers for use reading material
- To Motivate and Nurture students for competitive examination

SERVICES

- Home lending of books
- Reference Service
- Referral Service
- Current Awareness Service
- Inter Library Loan Service
- Extension Service
- Reprography Service
- Bibliography Service

FACILITIES

- Internet Facility
- Book Bank Facility
- OPAC Facility
- Book Reservation Facility
- Remote Access Facility
- Assistance in searching printed as well as e-resources
- Night Reading Room facility before and during examination period

LIBRARY HOURS

Working Hours

- Working hours of Library: 9.30 am to 5.45 pm.
- Library is open on all working days excluding Public and National holidays.
- Reading hall remains open from 9.30 am to 10.00 pm before and during the examination

Dr. Mrs. S. P. Bidarkar
Librarian

Hostel

Boys Hostel : Capacity 60 students with single occupancy

Girls Hostel : Capacity 60 students with single occupancy

Hostel Fees Details :

Sr. No.	Description	Amount
1.	Admission Fees	Rs.10/-
2.	Room Rent	Rs.1000/-
3.	Service Charges	Rs.500/-
4.	Electricity Charges	Rs.750/-
5.	Water Charges	Rs.250/-
6.	Deposit (Refundable)	Rs.200/-
	Total	Rs.2710/-

Minority Girls Hostel

- The facility, 70% seats of the total, is granted for minority girl students and 30% seats for others allotted as per State Govt. reservation rules.
- Preference will be given to candidate having parents annual income or joint income of not more than Rs. 2,50,000/-. For such students there is 100% concession in fees.
- Application in prescribed format should be submitted to the office..
For complete details and application from visit www.inosca.org
- Capacity 100 shared occupancy (admissions as per state Govt. rules)

Fees Details (per semester)	Description	Amount
	Room rent	1000/-
	Electricity charges	750/-
	Water charges	250/-
	Student welfare	300/-
	Medical examination	50/-
	Caution money	500/-
	Total	2850/-

Student Facilities

In-plant Training is provided in related fields

Campus Interviews & Departmental Recommendations for student placement

Various types of scholarships

- ☐ **Government of India scholarships**
- ☐ **National Loan Scholarship**
- ☐ **Open Merit Scholarship**
- ☐ **Eklavya Merit Scholarship**
- ☐ **EBC (Fee Concession)**
- ☐ **PTC (Fee Concession)**
- ☐ **UGC Postgraduate Indira Gandhi Scholarship scheme for single girl child**

Student Support :-

- ☐ **Sports Facilities:** Different in-door and out-door Sports facilities are available in the Institute. Students are encouraged to avail the same.
- ☐ **Railway / Bus concession :** Railway / Bus concession will be issued on occasions as per the rules prescribed. The applications for availing these facilities be made in the office through dept. HOD well in advance.
- ☐ **Identity Card**
 - (I) Every student admitted to the Institute must possess an Identity card
 - (ii) A duplicate Identity Card will be issued on payment of Rs. 50/-.
- ☐ **Grievance Redressal cell**
- ☐ **Photo Copy & Fax Facility**
- ☐ **In-plant Training is provided in related fields**
- ☐ **Campus Interviews & Departmental Recommendations for placements**

Consulting Services

- Department of Geology extends ground water exploration consultancy to farmers, Industries and plot owners for ground water prospecting for bore well and dug well.
- Department of Biophysics provides gamma irradiation facility.
- Department of Botany provides expert opinion to Regional Forensic Science Laboratory, Maharashtra State, Aurangabad and Fruit Research Station (of Marathwada Agriculture University, Parbhani) at Himayatbagh, Aurangabad.
- Members of the staff of the Department are actively engaged all the while in extending academic guidance / technical know how or advice like-
 - Identification and confirmation of fungal specimen.
 - Technical guidance for mushroom cultivation.
 - Supply of different fungal cultures.
 - Expert opinion of the botanical material referred by forensic laboratory.

Linkages

The Institute has following linkages:
(Students Summer Training , Projects)

Bhaba Atomic Research Centre	Mumbai
Bose Institute	Kolkata
Centre for DNA Finger Printing & Diagnostics	Hyderabad
Centre for Cellular and Molecular Biology	Hyderabad
Concourse Information Technology International Limited	Pune
Chitaranjan National Cancer Institute	Kolkata
Department of Microbiology, M.S. University	Baroda
Directorate of Geology and Mining	Nagpur
Govt. Biocontrol Laboratory	Aurangabad
Goa University	Dona Paula (Goa)
Hindustan Zinc Limited	Udaipur (Rajasthan)
ICMR Research Centre	Kolkata
Institute of Microbial Technology	Chandigarh
Institute of Veterinary Biological Products	Pune
Institute of Nuclear Medicine and Allied Sciences	New Delhi
Indian Institute of Chemical Biology	Kolkata
Indian Institute of Science, Bangalore	Bangalore
Inter-University Consortium centre (DAE Facilities) in Radiation Biology	Kolkata
Jadavapur University	Kolkata
Kalyani University	Kalyani, (W.B.)
Kamal Hi-Tech System ,Pvt.Ltd.	Aurangabad
Mahyco Research Centre	Jalna
Nath Biotechnologies Ltd.	Aurangabad
National Institute of Virology	Pune
National Chemical Laboratory	Pune
National Institute of Oceanography	Panjim
Post Graduate Institute of Medical Sciences and Research	Chandigarh
Physics Department, University of Pune	Pune
Post-graduate Department of Geology Nagpur University	Nagpur
Regional Research Laboratory	Jammu
Rudranee Infotech Ltd.	Aurangabad
Saha Institute of Nuclear Physics	Kolkata

Shere Kashmir Institute of Medical Sciences	Srinagar
Scientific Research Centre, Kelkar Education Trust	Mumbai
Wockhardt Research Centre	Aurangabad
Western Coalfields Limited	Nagpur

Academic Linkages
(Extension Lectures, Collaborative Research by Institute Faculties)

Environmental Science Dept., Dr. Babasaheb Ambedkar Marathwada University	Aurangabad
School of Life Science and School of Environmental Science, North Maharashtra University	Jalgaon
Academic Staff College, Pune University	Pune
Academic Staff College, Dr. Babasaheb Ambedkar Marathwada University	Aurangabad
Department of Physics, Pune University	Pune
School of Life Science, Swami Ramananda Tirth Marathwada University	Nanded
Dayanand College	Latur
Rajarshi Shahu College	Latur
Maulana Azad College	Aurangabad
Deogiri College	Aurangabad
Badrinarayan Barwale College	Jalna

Contact Us



The Director
Govt. Institute of Science
 Nipat Niranjana Nagar, Aurangabad Caves Road,
 Aurangabad - 431004 (M.S.) INDIA.

Phone: +91 (0240) 2400586, 2400598

Telefax: +91 (0240) 2400103

e-mail: director@inosca.org

Website: www.inosca.org
