

# Institutional Development Plan (IDP)



## Government Institute of Science

(Postgraduate and Research Institute of Maharashtra State)

**Nipat Niranjan Nagar, Caves Road,  
Chhatrapati Sambhajinagar**

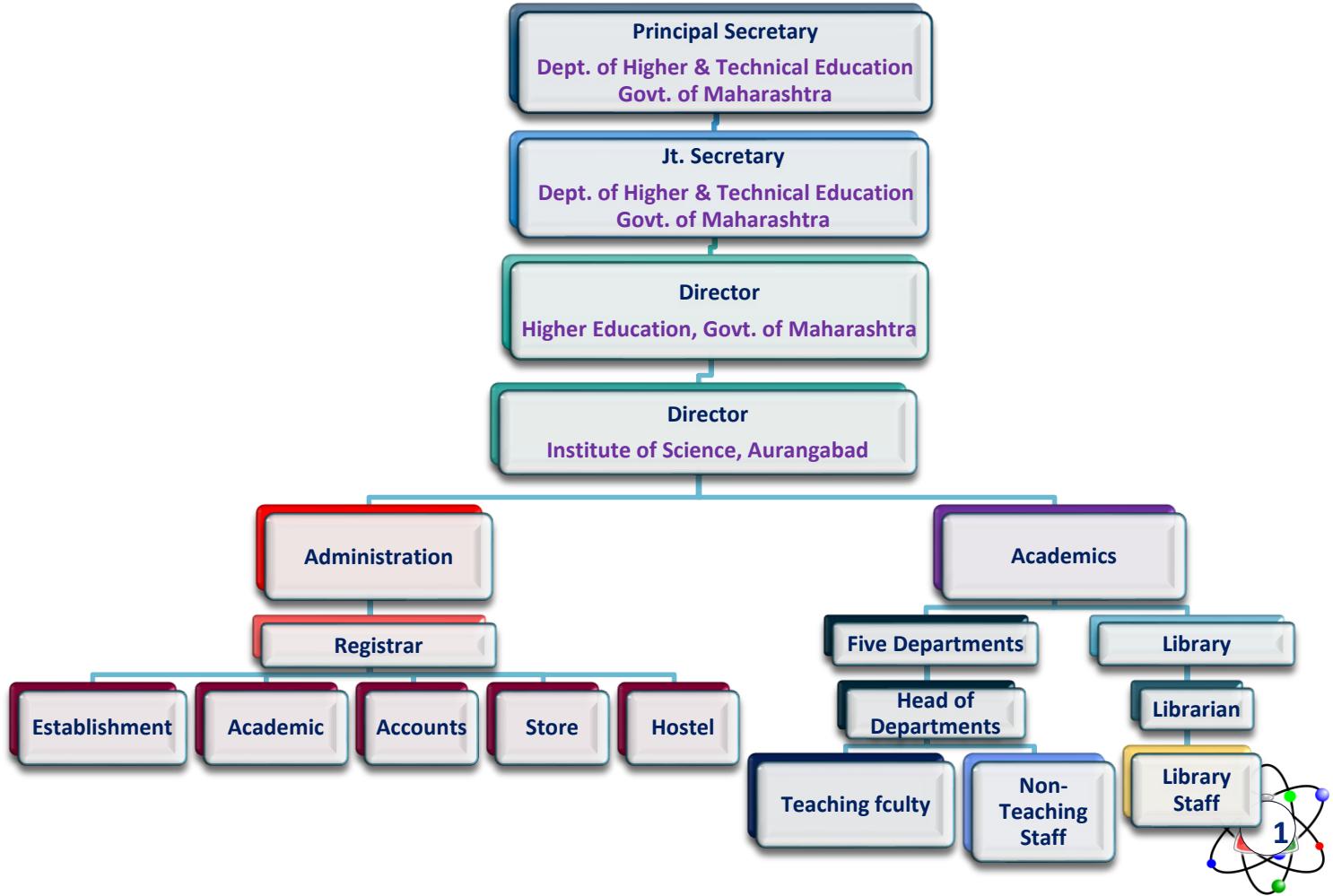
**2024-2029**

## Institutional Development Plan (IDP) under DSP Government Institute of Science, Aurangabad

### Institute Patronage



### Institute Hierarchy



# **Institutional Development Plan (2024-29)**

## **Government Institute of Science, Chhatrapati Sambhajinagar**

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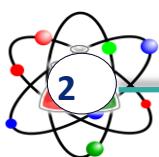
### **1. About us:**

Government Institute of Science, Aurangabad is a premier postgraduate and research institute established and funded by Department of Higher Education, Government of Maharashtra on 14<sup>th</sup> August 1974 and is spread over a sprawling area of 25 acres. The Institute is affiliated to Dr. Babasaheb Ambedkar Marathwada, University, Chhatrapati Sambhajinagar. It is the only Post-graduate and Research Institute in Marathwada region.

The institute is well known for its commitment to offer education and basic research. It offers postgraduate (PG) education in five subjects viz. Biophysics, Biotechnology, Botany, Geology and Microbiology with intake capacity of 20 students. All the departments are recognized as Ph. D. Centre by Dr. Babasaheb Ambedkar Marathwada University, Chhatrapati Sambhajinagar in last five decades the institute contributed to generating many scientific human resources by offering excellent training to its admitted students. Many professionals including scientific stalwarts working in industries, academic institutes and government sectors are pedagogically sculptured by the Institute. Institute is recognized by UGC Under 2f (5th Jan 1980) and 12B (3<sup>rd</sup>Sep 1985). The institute is identified & supported by DST, New Delhi, under scheme FIST Program – 2012.

### **2. Institute Infrastructure**

- Administrative block consisting of Director Office with attached conference hall, office of the Registrar.
- Three double story laboratory buildings housing 05 separate well-equipped departments.
- Central library with internet connectivity.
- A Multipurpose Hall / auditorium with a capacity of 200 seats for student centric activity along with indoor game facility.
- High speed Internet connectivity on the campus.
- Separate hostel for boys and girls (Boys hostel having a capacity of 100 students and girl's hostel with capacity of 160).
- Faculty quarters, separate residential quarter for Director and quarters for non-teaching staff.



**Institutional Development Plan (IDP) under DSP**  
**Government Institute of Science, Aurangabad**

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### **3. Departments:**

SR.NO	DEPARTMENT	ESTABLISHMENT YEAR	PROGRAMME
1.	Botany	1974	M.Sc., Ph.D.
2.	Microbiology	1976	M.Sc., Ph.D.
3.	Biophysics	1980	M.Sc., Ph.D.
4.	Geology	1984	M.Sc., Ph.D.
5.	Biotechnology	1998	M.Sc., Ph.D.

### **4. Vision:**

***“Accelerating Science Education for Human Welfare”***

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

### **5. Mission:**

- To develop citizens with scientific temperament, moral and ethical values, and multifaceted proactive personality by providing quality education.
- To evolve system(s) to provide quality education befitting local, regional, National, and global needs.
- To grow a multipronged innovative approach to serve community at large in front line areas in the field of Science and Technology.
- To provide practical based training catering to 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.

### **6. Objectives:**

- To fulfill the backlog of higher education of the region in the emerging areas of science.
- To cater for higher education and training in front-line areas of science, that will have strong vocational value and job potential.
- To generate human resources, to fulfill the local needs of industrial growth.



**Institutional Development Plan (2024-29)**  
**Government Institute of Science, Chhatrapati Sambhajinagar**

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- To enable the students of Marathwada region to enter 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.

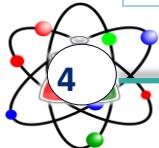
## **7. College development committee:**

**Institute – CDC has been decided and forwarded to higher authorities for approval.**

**Following are members of CDC.**

### **COLLEGE DEVELOPMENT COMMITTEE**

	Name	Title	Designation
1.	Dr. R.A. Satpute	Director	Chairman
2.	Dr. S. M. Deshpande	Joint Director	DHE Ex- officio Member
3.	Prof. S. A. Peshwe	Professor	Director Nominated HOD Member Secretary
4.	Prof. A. N. Salve	Professor	Member (Teaching)
5.	Dr. M. A. Sonar	Associate Professor	Elected Member (Teaching)
6.	Dr. J. J. Bhuktar	Assistant Professor	Elected Member (Teaching)
7.	Shri. A. R. Kokate	Lab- Attendant	Elected Member (Non-Teaching)
8.	Prof. Ram Chavan	Professor (Dr. BAMU Aurangabad)	Director, Higher Education Nominated Member (education)
9.	Prof. Laxmikant Shinde	Ex- MC Member (Dr. BAMU Aurangabad)	Director, Higher Education Nominated Member (education)
10.	Dr. Nandkumar Kunchge	Manager	Director, Higher Education Nominated Member (Industry)
11.	Mr. T. K. Chavan	Social worker	Director, Higher Education Nominated Member (Social Service)
12.	Mr. S. G. Kulkarni	Associate Professor (Ret'd.)	Director, Higher Education Nominated Member (Alumni)
13.	Students Representative	President College Student Council	Ex-officio Member
14.	Dr. K. M. Wanjarwadkar	Coordinator, IQAC	Ex-officio Member



## **8. Education at Institute:**

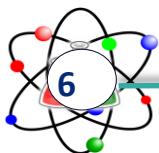
- The Institute follows the curriculum designed by Dr. Babasaheb Ambedkar Marathwada University, Aurangabad.
- At the beginning of every academic year, all the departments prepare an academic calendar, teaching plan and timetable to be implemented during the year.
- The Institute encourages the teachers to attend workshops and orientation programs organized by the Board of Studies in respective subjects to acquaint themselves with the depth of theory, practical, and the reference material.
- Teachers are made in charge of various aspects of curriculum with respect to planning and execution, a teacher is in-charge of group of students and guides them for seminars and projects, right from reviewing of literature to presentation.
- Continuous monitoring of the students as a part of internal assessment.
- Undertaking field visits to understand concepts, in Geology and Biological sciences.
- Industrial visits to understand production, technical and manufacturing processes.
- Every department submits their plan for organizing lecture of eminent personalities/scientist to promote the students to choose research career.

**Institute is presently offering post graduate program in 05 disciplines. To maintain quality in such diversified area of education, commitment from the institute is necessary. The institute aims to improve the pedagogical environment, so that it becomes learning centric.**



## **9. SWOC Analysis of Institute**

<b>Strengths</b>	
1.	Availability sufficient qualified teaching staff, majority of faculties have Ph. D. qualification.
2.	Institute is a recognized research Centre of affiliating university; total 09 faculty members are recognized research guide
3.	Separate classrooms and practical laboratories for M.Sc. Part I, II and research students.
4.	Central Computer laboratory developed under DST-FIST program
5.	Stable and high demand ratio for the courses.
6.	Available courses are compressive and competent to meet local to global needs of various field
7.	Frequent visits of Alumni occupying key positions in academics and research
8.	Student-centric academic planning and implementation
9.	Regular participation of students in National/International conferences, summer training, workshops, and symposia
10.	Open access to Instrumentation facilities for students and researchers
11.	Consultancy services for groundwater exploration and gamma irradiation
12.	Functional Placement and Training Cell.
13.	Active involvement of faculty members in research projects sponsored by various agencies
14.	Good research publication profile by publishing research in peer review, impact factor research journal of national/international repute.



**Institutional Development Plan (IDP) under DSP**  
**Government Institute of Science, Aurangabad**

Weakness	
1.	Limited/ inadequate funding for purchase and maintenance of sophisticated equipment
2.	Lack of awareness about the contents and prospects of the interdisciplinary subjects offered and poor communication skills due to rural background
3.	Vacant teaching and non-teaching positions
4.	Abolishment of the non-teaching posts (laboratory staff) due to policy decision
5.	No provision of funds for initiating in-house projects
6.	Constrain on hostel facility due higher demand ratio (combine for Institute and forensic science institute)
7.	Least scope to take student and faculty development decision

Opportunities	
1.	Scope for consultancy services in emerging field
2.	Avail funding from various funding agencies
3.	Establish MoU with Industry, research, and academic institute
4.	Faculty can acquire additional qualifications in allied fields by pursuing their post-Doctoral research.
5.	Offer workshop/ short term training courses in various allied subjects
6.	Departments have potential to establish further Interdisciplinary activities in teaching and research.
7.	Establishment of Sophisticated Instrumentation laboratory with availability of state-of-art instrumental, procedural, and computational facility.
8.	Organize state/national level Quiz/Workshop/conference



**Institutional Development Plan (2024-29)**  
**Government Institute of Science, Chhatrapati Sambhajinagar**

**Challenges**

1.	Explore new trends of research in varied discipline with limited available facilities and funds
2.	Separate faculty / specialization laboratories and financial budgets
3.	MIS for administration, teaching, and library
4.	Enriched e-content and availability of literature to all from library
5.	Faculty development initiatives, travel grants, participation grants etc.
6.	Rapid advances and explosion of information putting enormous stress on existing curricula and infrastructure
7.	Need for high value up gradations in content and infrastructure in resource constraint environment
8.	Filling of vacant position, getting more funds to enable for maintaining and improving department position in current competition to sustain students' interest in courses offered at Institute.

**10. Key challenges:**

For fulfillment and proper implantation of the vision and mission of the institute it is necessary to overcome a few constraints which are inevitable in various phases of development of institute. There is a restriction on academic, administrative, and financial freedom that institute can overcome. The swift governing system is essential for the growth of the institute. Lack of Management Information System (MIS) for three functional areas namely academic, training and placement and hostel management is need of the hour.

**To speed up the decision making and to save money, meetings of the various decision-making committees like building and works committee, finance committee and board of governance meeting will be arranged through video conferencing mode. An e-grievance cell will be constituted to address the grievance of the stakeholder.**



## **11. Goals:**

### **Short term goals**

- Implement NEP-2020 as per directives of a university from Academic Year 2023.
- Adapt one year post PG Diploma and revise two-year PG degree in accordance to need of UG curriculum.
- Assure the availability of Core, major and minor courses in all subjects.
- Initiate the action plan for participation in Cluster of Colleges as per UGC guideline.
- Up - gradation of infrastructure of laboratories and classrooms
- Avail ICT enabled teaching learning facilities.
- To upgrade IT infrastructure with high-speed internet connectivity through National Knowledge Network (NKN) in campus and purchase of hardware
- To establish Gymkhana and health center
- Guest house furnishing
- Renovation of auditorium and auditorium furnishing including audio video facilities
- Central Canteen facility including furniture.
- To procure learning management system-LMS along with smart classroom equipment for converting conventional classroom to smart classroom
- Promote faculty members for developing E-content resources/online module/MOOC.
- Augment teaching with AR/VR enabled content and facilities



## **Institutional Development Plan (2024-29)**

### **Government Institute of Science, Chhatrapati Sambhajinagar**

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- To upgrade laboratory facility with fume hoods, biosafety cabinets, piped natural gas line, storage furniture's, floor and counter resurfacing, installation of sliding windows, electrical wiring and fittings and aluminum partitioning, renovation of water storage facility.
- Renovation of hostels including solar electricity facility in entire campus
- Solar water heaters for hostels and guest houses.
- Establish MoU, collaborations and linkages with Premier Institution, research centers, Universities and Government sector.
- NAAC Re- accreditation (3rd cycle)
- Completion of data entry with SOUL software, digitalization of issuing of books and increase in online resources including e-subscription international research journals.
- Office automation through educational ERP modules
- Preparation of comprehensive Master Plan to guide the future growth of campus.

#### **Long Term Goals:**

- Initiate action plan for transforming institute into multidisciplinary degree awarding institute as per NEP - 2020
- Achieve Institutional development by Participating in “Cluster of College” Scheme
- Rejuvenate the departments of Statistics and applied Mathematics and Computer science and IT.
- Biotechnology research laboratory
- Construction of Geology Museum
- Development of Botanical Garden
- Establishment of Central Instrumentation Centre
- 24X7 online library facility
- Establish linkage with Incubation center of affiliated university.
- Construction of seminar hall on first floor of Central Instrumentation Centre building
- Digitization's of thesis & rare books
- Upgradation to green Institute (Eco toilets,)
- Construction of concrete roads and pavements in campus
- Construction of parking lot
- Construction of ramps at entrance of each building in the campus
- Landscaping work at entrance of administrative building



## Institutional Development Plan (IDP) under DSP

### Government Institute of Science, Aurangabad

- Construction of rainwater harvesting facilities in entire campus
- Construction of Gymkhana
- Purchase of furniture and gym sports and other recreational equipment
- Green campus development coupled with water conservation facilities.
- Development of sports ground with walking track
- Provision for research & development support including research fellowship and research assistance.
- Support for consultancy initiatives.
- Faculty development initiatives for improved competence based on training needs assessment.
- E Governance training support
- To reinforce institutional management capacity enhancement
- Build industry institute partnership.
- Initiatives for enhancement of students support
- Initiatives under equity cell
- Creating startup culture environment
- Playground development with modern running track, basketball, and volleyball court.

## 12. INSTITUTIONAL PROJECT BUDGET

S No.	Activities	Project Life Allocation	Financial year (in lakhs)				
			1 <sup>st</sup> 2024-25	2 <sup>nd</sup> 2025-26	3 <sup>rd</sup> 2026-27	4 <sup>th</sup> 2027-28	5 <sup>th</sup> 2028-29
	<b>1 Infrastructure</b>						
	1. Modernization and strengthening of laboratories including contractual technicians' recruitment	400	200	100	50	50	0
	2. Establishment of new laboratories for existing UG and PG programs and new PG programs including contractual technicians' recruitment	1950	450	400	400	400	300
	3. Modernization of classrooms	25	25	0	0	0	0
	4. Updating of Learning and Training Resources	50	30	5	5	5	5
	5. Procurement of furniture	549	134	223	142	50	

**Institutional Development Plan (2024-29)**  
**Government Institute of Science, Chhatrapati Sambhajinagar**

	6. Establishment/ Upgradation of Central and Departmental Computer Centers including contractual technicians' recruitment	21	20.20	0.20	0.20	0.20	0.20
	7. Modernization/improvements of supporting departments	20	20	0	0	0	0
	8. Modernization and strengthening of libraries and increasing access to knowledge resources	01	01	0	0	0	0
	9. Refurbishment (Minor Civil Works)	15	05	10	0	0	0
	10. Staff and Students residential infrastructure like a hostel, mess, etc.,	150	100	50	0	0	0
	11. Enhancing Sports, Cultural and Recreational Facilities with emphasis on the creation of Social Spaces	100	80	20	0	0	0
	12. Creation of Public Realm and enhancing Quality of Life on Campus	20	10	10	0	0	0
	13. Investment in preparation of comprehensive masterplan to guide future growth of campus	05	05	0	0	0	0
	<b>2 Research and development support</b>						
	Providing Teaching and Research Assistantships to existing and new M.Phil. and Ph.D. programs	75.0	15	15	15	15	15
	Provision of resources for research support	800	500	100	100	100	0
	Enhancement of R&D and institutional consultancy activities	300	200	100	0	0	0
	<b>3 Faculty Development Support</b>						
	Faculty and Staff Development (including pedagogical training, and organizing/participation of faculty in workshops, seminars, and conferences)	85	17	17	17	17	17

**Institutional Development Plan (IDP) under DSP**  
**Government Institute of Science, Aurangabad**

	for improved competence based on Training Needs Assessment						
	<b>4 Institutional reforms</b>						
	Technical assistance for procurement and academic activities	05	01	01	01	01	01
	Institutional management capacity enhancement	20	10	10	0	0	0
	<b>5 Academic support</b>						
	Creation of new departments/courses	25	05	05	05	05	05
	Enhanced Interaction with Industry	10	02	02	02	02	02
	Temporary faculty engagement	21	4.2	4.2	4.2	4.2	4.2
	Student support activities	30	06	06	06	06	06
	<b>6 Others</b>						
	Instrument Repair and Maintenance	5	1	1	1	1	1
	Playground Development	100	50	50	0	0	0
	Equity cell initiatives	1.0	0.2	0.2	0.2	0.2	0.2
	Institutional Best Practices Support	05	01	01	01	01	01
	Dug well for Lab's water supply	10	10	0	0	0	0
	<b>TOTAL</b>	4798	1902.6	1130.6	744.6	657.6	357.6

### 13. Action Plan:

#### Academic

- Compulsory review of academic studies is planned to be exercised every four years. It should include revision of the curriculum, introduction of new courses, review of evaluation system etc. This review will be based on the feedback received from teachers, alumni, students, industry, and other stakeholders. While carrying out the review exercise experts from leading institutions and from surrounding industry should be involved.
- Renovation of the existing laboratory is of immediate importance. State-of-the-art laboratories needs to be established. More emphasis should be given to field training and laboratory teaching.
- To nurture the hidden creativity of students, every department should have / establish professional student associations. The activity of the association should be encouraged.



# **Institutional Development Plan (2024-29)**

## **Government Institute of Science, Chhatrapati Sambhajinagar**

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- Students will be taught business ethics and soft skill courses. Special body language training must be given to students for their growth in the corporate world.
- NCC/NSS/Sports must be compulsory for all students by assigning credits.
- Each department should undertake a promotional plan for faculty members to travel to neighboring institutions and deliver lectures there to motivate the students to do PG in different disciplines at GISCA.
- Interaction with MCC and other industries, MCED should be initiated, a functional industry institute interaction needed for entrepreneurship development in various aspects.
- Institute is offering five post graduate programs. New postgraduate program will be started

### **Student activity center**

- It is planned to develop a student activity center in the campus to cater the needs of increasing student strength.
- It is planned to develop a sports complex to provide facilities for all kinds of indoor and outdoor games.
- The student counseling service will also be part of this. The counseling will help depressed students to feel motivated towards their studies and career.

### **Human Resource Recruitment & Development**

**Institute will make hard and sincere efforts to fill up all the vacancies in faculty and non-faculty positions within three years. The institute also needs technically trained manpower for the laboratories. The institute will also take care of the professional development of faculty and non-faculty members of the institute.**

#### **Institute proposes following action plan:**

- Sincere efforts to fill up vacancies in faculty and office staff positions.
- Provisions will be made for appointing visiting faculty and distinguished honorary faculty.
- Industry experts will be invited to deliver talks and have interactions with faculty and students.
- Faculty members will be sponsored for qualification improvement and skill improvement wherever necessary.
- Efforts will be made to skill development for higher studies.
- Supporting technical and administrative staff will be periodically sponsored for continual training in new technology and modern working methods.

## **Resource generation**

- In the next decade, the institute wishes to develop expertise and competencies to offer consultancy services to the industry. The expertise available in the institute will be given publicity to attract needy industries. For this, the institute shall also strengthen alumni relations and will explore the possibilities of research and consultancies. Periodic round table meetings with senior alumni will be held to achieve the target.

## **Research**

The institute has to contribute in the advancement of knowledge in basic sciences to emerging areas. Research culture needs to be fostered in the minds of faculty and young students. Following are the identified thrust areas for research-

Department	Thrust research areas
Biotechnology	Bioremediation, Plant pathology, and pharmaceutical microbiology
	Drug discovery, microbial biotechnology
	Bioremediation, Photochemistry
	Nano-biotechnology
	Drug discovery
	Applied Mycology, Plant-Pathology, and fungal nanotechnology
Microbiology	Geomicrobiology, Bioinstrumentation, Biopolymers and Thermophiles
	Enzymology, Bacterial Protease, Human microbiome
	Pharmaceutical microbiology
	Microbial Biotechnology, Bio-nanotechnology
	Enzyme technology and Process development
	Halophile and Protease inhibitor
	Microbial bioremediation



**Institutional Development Plan (2024-29)**  
**Government Institute of Science, Chhatrapati Sambhajinagar**

Department	Thrust research areas
Botany	Ethnobotany, Plant biotechnology, Cytology, Mutation breeding, Molecular biology
	Algology and plant ecology
	Phyto-chemistry, Palynology
Geology	Hydrogeology, Hydro-geochemistry, Ground water exploration
	Micropaleontology, Stratigraphy, Geomorphology, and hydrogeology
	Paleontology –Stratigraphy and Ichnology
Biophysics	Ultrasound Biophysics, Structural and kinetic based studies in bio-macromolecules
	Radiation Biophysics, Free Radical Biology,

## **The alumni association**

The Functional Alumni association is actively involved in the development of institute. Most alumni are contributing by sharing their expertise and experience for the overall development of students. Alumni are also helping in placement of students.

## **Institute social responsibility.**

**As an institute of national importance, the institute realizes its responsibility towards the society.**

**To satisfy the needs of the society, a center will be established which will focus on following broad areas:**

- Arranging faculty development program for faculty members of surrounding institutes and faculty of this institute.
- Entrepreneurship awareness and innovation.
- Social awareness about local and national problems and to find possible technological solutions.
- Skill development for rural and persons from backward society of Marathwada.

## **Carrier development cell**

The Institute strongly feels its responsibility in placing all the students for summer training and for their career. To be successful in their career students need to be trained properly during their studies. For this, a

carrier development cell will be established. The cell will consist of one-two teachers and supporting staff. The center will offer career counseling, personality development and soft skill development training. It will also provide guidance to students to help them to choose the correct career option.

## **14. Institute Road Map:**

**Organization of student centric activities annually in all subjects, for popularization of institute programs at state and national level to attract and retain students. Efforts for raising funds to initiate student centric activities. Creating MoU with various academic centers, industries, and research institutes for exchange of facilities and initiate programs of mutual interest.**

- **2022-23: renovation and upgradation / modernization of laboratories and classrooms for ICT based education to meet quality education. NAAC accreditation (3<sup>rd</sup>Cycle)**
- **2023-24: Implementation of NEP-2002 policy. Initiate the Cluster of Colleges scheme. Upgrading of faculty members, encouraging them for perusing higher studies-PhD**
- **2024-25: To achieve research excellence and establish incubation center**
- **2025-26: Center for excellence in government colleges**
- **2026-27: Steps towards degree awarding institute as active component of Cluster of College.**

## **15. Final word**

This IDP document is prepared after carrying out SWOC analysis by various stakeholders and by arranging brainstorming sessions. Some of the steps have already been taken to achieve the desired goal. The progress will be periodically reviewed to take suitable corrective actions, if necessary. We are assured that with this IDP document and with dedicated efforts of all faculty members and stakeholders, significant progress of Institute will be achieved.

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