

***Program Outcome, Course Outcome and Program Specific  
Outcome for the session 2020-21***

The students should gain the knowledge in their subjects of Physics, Chemistry, Botany, Zoology, Mathematics, Electronics, Computer Science, Statistics, Microbiology, Biotechnology and Geology. Understood the basic concepts, fundamental principles, and the scientific theories related to various scientific phenomena and their references in the day-to-day life.

**a. Meritorious Achievement**

• **Under Graduation (B.Sc.)**

Sr. No.	Name of Students	Merit Position
1.	Ku Lokita Patle	01
2.	Ku Tejaswini Soni	08

• **Under Graduation (BCA)**

Sr. No.	Name of Students	Merit Position
1.	Ku Simranjeet Kaur	01
2.	Mr Leeladhar A Banothe	04
3	Ku Muskan Kamwani	05
4	Ku Mrunali Bokde	06
5	Ku Saroj Jangid	07
6	Ku Neha Chandhra	09
7	Ku Krutika Raut	10

• **Post-graduation (M.Sc. Computer Science)**

Sr. No.	Name of Students	Merit Position
1	Ku Leena Chauhan	03

• **Post-Graduation (M.Sc. Microbiology)**

Sr. No.	Name of Students	Merit Position
1	Sanskriti Kakde	02
2	Muskan Harde	02
3	Lavanya Shriramwar	03
4	Shital Bante	04

**Medals/Awards/Prizes**

Sr. No.	Name of the student	Medal/Award/Prize
1	Lokita Patle	Gold Medal RTMNU
2	Vishal R Kharachwal	Rashtriya Samaj Seva Award 2021 The global human rights, foundation, National Prestigious Award New Delhi
3	Vishal R Kharachwal	Best student award for session 2020-21 By Microbiologist Society, India
4	Rakhi Khandelwal	Best student award for session 2020-21 By Microbiologist Society, India
5	Vaishnavi Ghugal	Secured 2 <sup>nd</sup> rank in Digital Poster making committee, National Education Policy
6	Rashmi Chopkar	Top six in the quiz culture, Technical and Application.

**b. Performance in IIT JAM**

The following students qualified IIT-JAM exam from Dept. of Geology.

Sr. No.	Name of Students	Rank
1	Mayur Joshi	AIR - 116
2	Akansha Borkar	AIR - 183
3	Shivangi Gedam	AIR - 228
4	Lokita Patle	AIR - 231
5	Annapurna Adhikari	AIR – 334
6	Mansi Agrawal	AIR - 357
7	Devyani Shelke	AIR – 398
8	Parag Dalal	AIR – 410
9	Siddharth Gajbhiye	AIR - 546
10	Riya Ghormare	AIR - 582

**c. Placements Record:****Training and Placement Activity Report (2020-21)**

Total 29 students of B.Sc. /BCA/MCA/M.Sc. are placed in On Campus / Off Campus Drives till report writing.

- Placement drive by “TCS” on 18/11/2020
- Placement drive by “Hexaware” on 23/12/2020
- Placement drive by “HCL, Nagpur.” on 03/03/2021
- Placement drive by “DelaPlex” on 31/05/2021
- Placement drive by “Wipro” on 16/06/2021
- Placement drive by “Infosys” on 17/06/2021

Placement Record of Session 2020-2021						
Sr. No	Name of Company	Place and Mode Of Interview.	Date of Event		Names of Selected Student	Salary Offered Per Annum in Lakhs
1	Wipro	Shivaji Science College, Nagpur-Online Mode	16/06/2021	1	Srushti Vinod Gharpure	2,76,000
				2	Vaishnavi Arvind Wadhai	
				3	Aisharya Ishwar Sawarkar	
				4	Sanyogita Gupta	
				5	Akansha Anil Sinha	
				6	Mansi Elgunde	
				7	Manu Dilip Sanodiya	
2	Hexaware	Shivaji Science College, Nagpur-Online Mode	23/12/2020	1	Asakti Vinay Bhongade	3,82,000
				2	Payal Sunil Khonde	
3	Infosys	Shivaji Science College, Nagpur-Online Mode	17/06/2021	1	Srushti Vinod Gharpure	2,20,000
				2	Aisharya Ishwar Sawarkar	
				3	Sanyogita Gupta	
				4	Vaibhavi Jitendra Tanna	
				5	Anjali Aggarwal	
				6	Akansha Anil Sinha	
				7	Mansi Elgunde	
				8	Tejas Purushottam Totade	
4	DelaPlex	Shivaji Science College, Nagpur-Online Mode	31/05/2021	1	Suyash SanjeevShankar	3,84,000
				2	Yash Chandrashekhar Sulakhe	
				3	Mrunal Sudhakar Pantawne	
5	TCS	Shivaji Science College, Nagpur-Online Mode	18/11/2020	1	Srushti Vinod Gharpure	1,90,926
				2	Mansi Nitin Elgunde	
				3	Aisharya Ishwar Sawarkar	
				4	Vaibhavi Jitendra Tanna	
				5	Anjali Aggarwal	
				6	Mansi Elgunde	
				7	Praful Kishor Dangre	
6	HCL	Shivaji Science College, Nagpur-Online Mode	03/03/2021	1	Srushti Vinod Gharpure	2,20,000
				2	Akansha Anil Sinha	

Total Placement = 29

A. A. Halder  
Convener  
Training and Placement

Date: 20/07/2021

## **Course outcomes**

### **1. Department of Botany**

#### **A. Results of University examination:**

B.Sc. Sem V	100
B.Sc. Sem VI	100

#### **B. At the completion of B. Sc. with Botany as one of the subject students are expected to do the following:**

- Understand the morphological and structural organization of lower and higher Cryptogams and its ethno botanical importance in concern with human life.
- Develop an awareness about eco-friendly activities.
- Self-employment in the fields of mushroom Cultivation, organic farming (Roof top farming), plant tissue culture etc.

### **2. Department of Biotechnology**

#### **A. Results of University examination:**

B.Sc. Sem V	100
B.Sc. Sem VI	100

#### **B. At the completion of B. Sc. with Biotechnology as one of the subject students are expected to do the following:**

- Genetic manipulation of microorganisms to produce antibiotics, hormones, etc
- As a Laboratory Technician
- In Quality Control analyst of Pharmaceutical Industries, Food Industries.
- Clinical Research Analyst
- As a Research Scientist
- As a Project Assistant
- Research sector in Forensic Sciences and Genetic Engineering.
- Computational Biology (Bioinformatics)

### **3. Department of Computer Science**

#### **A. Results of University examination:**

B. Sc. Sem V	100
B. Sc. Sem VI	100
B. C.A. Sem V	100
B. C.A. Sem V	100
M. Sc. Sem III	100
M. Sc. Sem IV	100
M. C. A. Sem V	100
M. C. A. Sem VI	100

#### **B. At the completion of B. Sc. with Computer Science as one of the subject students are expected to do the following:**

- As Software developer.
- As a System Administrators.
- As IT Sales and Marketing person.
- As the IT Officers in Banks and cooperative societies.
- As DTP Operator in small-scale industries.
- As the Web Designers with latest web development technologies.
- Developing the various IT skills to the electronic databases.
- Solve the problems in the Information Technology environment
- Develop IT-oriented security issues and protocols
- Design and implement a web page
- Programmer
- Web Designer
- System Administration
- Logic Designer

#### **4. Department of Chemistry**

##### **A. Results of University examination:**

B. Sc. Sem V	99.19
B. Sc. Sem VI	100
M. Sc. Sem III	100
M. Sc. Sem IV	100

##### **B. At the completion of B. Sc. with Chemistry as one of the subject students are expected to do the following:**

- Aware about minimum utilization of chemicals for maintaining the environment eco-friendly.
- Use of modern instrumentation such as HPLC, Spectrophotometer acquaint the student about qualitative and quantitative analysis.
- Employed in chemical/pharmacy companies.
- Pursue research in the basic sciences in the college.
- Understand the interdisciplinary approach of chemistry.
- Learn the laboratory skills needed to design, safely and interpret chemical research.
- Acquired a foundation of chemistry

#### **5. Department of Electronics**

##### **A. Results of University examination**

B. Sc. Sem V	100
B. Sc. Sem VI	100

##### **B. At the completion of B. Sc. with Electronics as one of the subject students are expected to do the following:**

- Realize their goals and aspirations.
- Possess essential attitudes, knowledge and skills.
- Contribute positively to and compete in society.

- Exercise citizenship rights and responsibilities.
- Master subjects without need for remediation further their education and pursue careers around the world.

## **6. Department of Geology**

### **A. Results of University examination**

B. Sc. Sem V	100
B. Sc. Sem VI	100

### **B. At the completion of B. Sc. with Geology as one of the subject students are expected to do the following:**

- Pursue the following courses to make career as a Geologist.
- M. Sc. in Applied Geology.
- M. Sc. (Tech) in Geology.
- ISM Dhanbad.
- In Land Pollution.

## **7. Department of Mathematics**

### **A. Results of University examination:**

B. Sc. Sem V	99.58
B. Sc. Sem VI	98.75
M. Sc. Sem III	100
M. Sc. Sem IV	100

### **B. At the completion of B. Sc. with Mathematics as one of the subject students are expected to do the following:**

- Learn to solve problems of integrals and differential calculus.
- Make use of linear equations for solving any differential equations.
- Understand various problems related with planar graphs.
- Understand the Concepts of Matrices and linear equations.
- Learn properties and applications of Laplace transformation

## **8. Department of Microbiology**

### **A. Results of University examination:**

B. Sc. Sem V	100
B. Sc. Sem VI	98.74
M. Sc. Sem III	100
M. Sc. Sem IV	100

### **B. At the completion of B. Sc. with Microbiology as one of the subject students are expected to do the following:**

- As a Laboratory Technician
- In Quality Control analyst of Pharmaceutical Industries, Food Industries.
- Clinical Research Analyst
- In Biomedical Engineering.

- As a Research Scientist
- In Vaccine Institutes
- As a Project Assistant
- Research sector in Forensic Sciences and Genetic Engineering.
- Lectureship in Life Sciences and Agricultural Sciences.
- Research Analyst in Scientific Journals (Springer, Nature, Science Direct Based Journals)
- Pollution Control Department
- In Bio-fertilizers and Bio-pesticides Preparation Industries
- In Environment Based Industries
- Intellectual Property Rights
- Computational Biology (Bioinformatics)

## **9. Department of Physics**

### **A. Results of University examination**

B. Sc. Sem V	100
B. Sc. Sem VI	100
M. Sc. Sem III	100
M. Sc. Sem IV	100

### **B. At the completion of B. Sc. with Physics as one of the subject students are expected to do the following:**

- Understand the theories & principles of physics, which includes mechanics, electromagnetism, thermodynamics, & quantum mechanics.
- Learn the Concepts as Quantum Mechanics, Relativity etc.
- Provide knowledge about material properties and its application for developing technology to ease the problems related to the society.
- Understand the physical laws, describing the motion of bodies, under the influence of system of forces.
- Understand the relationship between particles & atom,
- Relate the structure of atoms & subatomic particles
- Understand physical properties of molecule the chemical bonds
- Analyze the applications of mathematics to the problems in physics & develop suitable
- Learn the structure of solid materials & their different physical properties along with metallurgy, cryogenics, electronics, & material science.
- Understand the fundamental theory of nature at small scale & levels of atom & sub-atomic particles.

## **10. Department of Statistics**

### **A. Results of University Examination**

B. Sc. Sem V	
B. Sc. Sem VI	

### **B. At the completion of B. Sc. with Statistics as one of the subject students are expected to do the following:**

- Appear for Indian Statistical Services (UPSC).
- Work as a Statistical quality control officer.
- Work as a Statistical officer in various industries.
- Work as a statistical consultant, Data analyst etc.
- Gain knowledge about Operational Research.

## 11. Department of Zoology

### A. Results of University examination

B. Sc. Sem V	
B. Sc. Sem VI	

### B. At the completion of B. Sc. with Zoology as one of the subject students are expected to do the following:

- Knows about identification of wild animals and its classification.
- Acquire knowledge about wild life and its conservation.
- Gain basic knowledge about human pathology and physiology.
- Gain knowledge about biomedical instrumentation and its working.
- Basic concept of genetics, and biotechnology.
- Know about fish culture, prawn culture and pearl culture.
- Acquire knowledge about mineral and water cycling in nature and water conservation.

<b>Post Graduate Teaching Department of Chemistry</b> <b>Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur</b> <b>M.Sc. - Chemistry</b>	
PROGRAM SPECIFIC OUTCOMES	
PSO1	<b>Chemistry Knowledge:</b> Possess knowledge and comprehension of the core and basic knowledge associated with the profession of chemistry, including specialized areas of inorganic chemistry, organic chemistry, physical chemistry, analytical chemistry, and elective subjects of nuclear chemistry, medicinal chemistry, polymer chemistry and environmental chemistry.
PSO2	<b>Problem analysis &amp; Modern tool usage:</b> Utilize the principles of scientific enquiry, thinking analytically, clearly and critically, while solving problems and making decisions. Find, analyze, evaluate and apply information systematically and to make defensible decisions. Learn, select, and apply appropriate methods and procedures resources, and modern chemistry-related to computing tools with an understanding of the limitations.
PSO3	<b>Environment and sustainability:</b> Understand the impact of the professional chemistry solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PSO4	<b>Life-long learning:</b> Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change. Self-access and use feedback effectively from others to identify learning needs and to satisfy these needs on an ongoing basis.
PO5	<b>Leadership skills:</b> Understand and consider the human reaction to change, motivation issues, leadership and team-building when planning changes required for fulfillment of practice, professional and societal responsibilities. Assume participatory role as responsible citizen or leadership roles when appropriate to facilitate improvement in health and well-being.
PO6	<b>Professional Identity:</b> Understand, analyze and communicate the value of their professional roles in society (e.g. environmental professionals, analytical professionals, educators, researchers, employers, employees).
PO7	<b>Communication:</b> Communicate effectively with the society at large, such as, being able to comprehend and write effective reports, make effective presentations and documentation, and give and receive clear instructions.

**Program Outcomes**  
**Name of Program: M.Sc. Microbiology**  
**No. Of Courses: 30**

**Targeted Graduate Attributes: Disciplinary Knowledge, Critical Thinking, Problem Solving, Analytical Reasoning, Communication Skills, Teamwork, Moral and Ethical Awareness**


Program Outcomes	
<b>PO1</b>	Students will be able to gain, communicative, recall and apply specialized language and <b>knowledge</b> relevant to microbiology.
<b>PO2</b>	Students will acquire and demonstrate ability in laboratory safety in routine and specialized microbiological laboratory skills applicable to microbiological research methods, including observations and analysis.
<b>PO3</b>	Students will <b>develop</b> ability for hypothesis generation and testing, development of theoretical and practical skills in the designing and execution of experiments results and analytical judgment clearly and quickly.
<b>PO4</b>	Students will be able to work effectively in diverse condition as team to communicate with social community to make life easier and better for society by <b>explaining</b> awareness about hygienic condition, Environmental changes, recycling of waste by using microorganisms.
<b>PO5</b>	Students will able to <b>develop</b> professional and technical skill in lectureship, quality control, scientist in industries as well as in research laboratories.

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**Program Outcomes**  
**Name of Program: M.Sc. Computer Science**  
**No. Of Courses: 30**

**Targeted Graduate Attributes: Disciplinary Knowledge, Critical Thinking, Problem Solving, Analytical Reasoning, Communication Skills, Teamwork, Moral and Ethical Awareness**

Program Outcomes	
<b>PSO1</b>	The students will be able to develop aptitude to manifest a wide and extensive knowledge in the field of computer science.
<b>PSO2</b>	Ability to think critically for solving various problems and recent trends in computer softwares.
<b>PSO3</b>	The students will be capable of working effectively in diverse conditions as a team.
<b>PSO4</b>	The students will be able to develop skills in software design and its implementation.
<b>PSO5</b>	The students will be able to apply knowledge of computer science in academic and corporate sectors.
<b>PSO6</b>	The students will be able to develop self sustainability as well as competitiveness and employability.
<b>PSO7</b>	The students will be able to plan and write a research paper or proposal and assignment in computer science.

  
 (S.R. Pande)

Chairman  
 BOS in Computer Science

Department of Physics, RTMNU

Name of Programme: M.Sc Physics

**Programme specific outcome**

After completion of course, the student will be to:

**PSO1:** Understanding basic principles of Physics which are underlying a wide selection of physical phenomenon.

**PSO2:** Explore with current state-of-art in the selected area of Physics.

**PSO3:** Inculcate the habit to plan, design and execute new experiment. Analyze, interpret experimental result and write report on it.

**PSO4:** Assess the errors involved in an experiment work; searching out and adopting new methodology to reduce errors. Presents the experimental outcome in effective manner.

**PSO5:** After completing PG degree from this programme, they will be eligible to continue research at the higher degree (Ph.D) level. They will be trained by experimental, computer programming and data interpretation programming skill and exposed to improve their employability in research and development, in scientific and engineering industries.

**PSO6:** Additionally, they will have necessary numerical and transferable skills to select general career choice such as accounting or computing.

*Approved  
by  
BOS Chairman*

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Name of Program: **M.C.A.(Master in Computer Applications)**

No. Of Courses: 25

**Targeted Graduate Attributes: Disciplinary Knowledge, Critical Thinking, Problem Solving, Analytical Reasoning, Communication Skills, Teamwork, Moral and Ethical Awareness**

Program Outcomes	
<b>PSO1</b>	The students will be able to develop aptitude to manifest a diverse and far-reaching knowledge in the field of computer application.
<b>PSO2</b>	The students will be able to think critically for solving various problems related to computer application.
<b>PSO3</b>	The students will be able to identify different problem solving methods in the field of computer application / software development.
<b>PSO4</b>	Ability to develop skills in software development, maintenance and its implementation.
<b>PSO5</b>	The students will be able to apply knowledge of computer application / software in academic as well as other sectors.
<b>PSO6</b>	Ability to develop time management and planning skills.
<b>PSO7</b>	The students will be able to think logically while developing software in the field of computer application.

*(S. R. Pande)  
Chairman  
BOS in Computer Science*

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**Program Specific Outcomes**

Name of Program : M.Sc. Mathematics

No. of Courses : 30

On successful completion of the M.Sc. MATHEMATICS programme a student will be able to

PSO1	Disciplinary Knowledge	Understand the basic and advanced knowledge in the field of Mathematics.
PSO2	Communication Skills	Effectively communicate and explore ideas of mathematics for propagation of knowledge and popularization of mathematics in society
PSO3	Critical Thinking	Identify, analyse, formulate various problems with scientific approach
PSO4	Problem Solving	Identify and apply the most effective method to solve and evaluate the appropriate solution within a stipulated time
PSO5	Professional Skills	Explain/ demonstrate accurate and efficient use of advanced Mathematical techniques
PSO6	Team Work	Participate constructively in classroom discussion
PSO7	Digital literacy	Have sound knowledge of mathematical modeling, programming and computational techniques as required for research or employment in industry
PSO8	Ethical and Social awareness	Capable of demonstrating the ethical issues related with the Intellectual Property Rights, copyright etc. and demonstrate highest standards of ethical issues in mathematics