॥ अंतरी पेटवू ज्ञानज्योत ॥

# कवयित्री बहिणाबाई चौधरी उत्तर महाराष्ट्र विद्यापीठ, जळगाव
# Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon

**अभ्यास मंडळ विभाग**


दूरध्वनी : (९१) ०२५७- २२५७२९४, २९७
फॅक्स : (९१) ०२५७- २२५८४०६
वेबसाईट : www.nmu.ac.in
ई-मेल : acnanores@nmu.ac.in


जा.क्र. :उमवि/२१/Environmental Studies/ 62 /२०१८ दिनांक:- २२/११/२०१८

प्रति,
क.ब.चौ.उमविशी संलग्न सर्व महाविद्यालयांचे मा.प्राचार्य
व मान्यता प्राप्त परिसंस्थांचे मा. संचालक आणि
मा.विभाग प्रमुख विद्यापीठ शैक्षणिक प्रशाळा / विभाग यांना...

विषय :- Environmental Studies या विषयाचे अभ्यासक्रम संदर्भात.

**महोदय / महोदया,**

उपरोक्त विषयांस अनुसरुन आपणांस कळविण्यात येते की, मा.सर्वोच्च न्यायालयाचे निर्णयानुसार पर्यावरण संतुलन राखण्यासाठी प्रथम वर्षास प्रवेशित विद्यार्थ्यांसाठी सहा महिन्यांचा पर्यावरणशास्त्र विषयाचा अभ्यासक्रम जून, २००४ पासून सर्व विद्याशाखांमध्ये समाविष्ट करण्यात आलेला आहे.

शैक्षणिक वर्ष २०१८-१९ पासून प्रथम वर्ष कला विज्ञान व वाणिज्य वर्गांना Choice Based Credit System लागू करण्यात आलेली असल्याने Enviroamental Studies या विषयाचा अभ्यासक्रम Ability Enhancement Course अंतर्गत Choice Based Credit System प्रमाणे तयार करणेसाठी नियुक्त समितीच्या सभेत Environmental Studies विषयाच्या गुणांची विभागणी (Marks Pattern) देखील ६०:४० प्रमाणे करण्यात यावी, व गुणांकन (Marks Pattern) पुढील प्रमाणे करण्यात यावे, असे ठरले आहे.

| | |
|---|---|
| **लेखी परीक्षा (Theory)** | **६० गुण** |
| **अंतर्गत (Internal) परीक्षा फिल्ड वर्क /व्हायवा** | **४० गुण** |
| **एकूण** | **१०० गुण** |

अंतर्गत ४० गुणांची विभागणी पुढील प्रमाणे करण्यात यावी.

| | |
|---|---|
| उपस्थिती (Attendance) | ०५ गुण |
| वर्तणूक (Behaviour) | ०५ गुण |
| व्हायवा (Viva-voce) | १० गुण |
| फिल्ड वर्क (Report of field Work) | २० गुण |
| | ४० गुण |

त्याअनुषंगाने Environmental Studies या विषयाचा अभ्यासक्रम विद्यापीठ अनुदान आयोगाने दिलेला असून तो जसाचे तसा लागू करण्यात आलेला असल्याने अभ्यासक्रमात बदल न करता अभ्यासक्रम तोच ठेवण्यात आला आहे. सदरचा अभ्यासक्रम उमविच्या संकेत स्थळावर अपलोड करण्यात आला आहे. तरी वरील आशय सर्व संबंधित प्राध्यापक व विद्यार्थी यांचे निदर्शनास आणून देवून पुढील योग्य ती कार्यवाही करुन विद्यापीठास सहकार्य करावे, ही विनंती.

म.कळावे.

आपला विश्वासू,

(ए.सी.मनोरे)
उपकुलसचिव
अभ्यास मंडळ विभाग

KAVAYITRI BAHINABAI CHAUDHARI
NORTH MAHARASHTRA UNIVERSITY,
JALGAON

# Academic Curriculum
## (For Affiliated Colleges of KBCNMU)

## MASTER OF SCIENCE

## In

## ORGANIC CHEMISTRY

## PART- II

(Semester III and IV)

Choice Based Credit System, 60:40 Pattern
(Outcome Based Curriculum)

As per UGC Guidelines

w. e. f. 2022-23

2022

# KAVAYITRI BAHINABAI CHAUDHARI NORTH MAHARASHTRA UNIVERSITY, JALGAON

## Summary of Distribution of Credits under CBCS Scheme for M.Sc. Organic Chemistry at

[Affiliated Colleges of Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon w.e.f. 2022-23]

| Sr. No | Type of course | Sem I | Sem II | Sem III | Sem IV |
|---|---|---|---|---|---|
| 01 | Core | 12 | 12 | 12 | 08 |
| 02 | Core Skill based | 02 | 20 | - | 12 |
| 03 | Elective | - | - | 04 | 04 |
| 04 | Project | - | - | - | 06 |
| 05 | Audit | 02 | 02 | 02 | 02 |
| 06 | Total Credits | 16 | 34 | 18 | 32 |

| Subject Type | Core | Core Skill based | Elective | Project | Audit | Total |
|---|---|---|---|---|---|---|
| Credits | 44 | 34 | 08 | 06 | 08 | 100 |

**Total Credits = 100**

# Kavayitri Bahinabai Chaudhari North Maharashtra University Jalgaon

## M. Sc. Part-II Organic Chemistry (Sem-III and IV)

### Choice Based Credit System (Outcome Based Curriculum)

### Semester-III

| Course Code | Course Type | Title of the Course | Contact hours/week | | | Distribution of Marks for Examination | | | | | | Credits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Internal | | External | | Total | | |
| | | | Th | Pr | Total | Th | Pr | Th | Pr | Th | Pr | |
| CH-350 | Core | Organic Reaction Mechanism | 04 | -- | 04 | 40 | -- | 60 | -- | 100 | -- | 04 |
| CH-351 | Core | Spectroscopic Methods in Structure Determination | 04 | -- | 04 | 40 | -- | 60 | -- | 100 | -- | 04 |
| CH-352 | Core | Organic Stereo Chemistry | 04 | -- | 04 | 40 | -- | 60 | -- | 100 | -- | 04 |
| CH-353 | Elective | Choose one out of two CH-353 A/B (A) Heterocyclic Chemistry (B) Green Chemistry | 04 | -- | 04 | 40 | -- | 60 | -- | 100 | -- | 04 |
| AC-301 (A)/ (B)/(C)/(D) | Audit Course | Choose one out of four (AC-301 A/B/C/D) (Technology + Value Added Course) | 02 | -- | 02 | 100 | -- | -- | -- | 100 | -- | 02 |

**List of Audit courses to be offered in Semester-III:**

**AC-301 (A): Computer Skills**
**AC-301 (B): Cyber Security**
**AC-301 (C): Molecular Docking**
**AC-301 (D): Technical Report Writing**

### Semester-IV

| Course Code | Course Type | Title of the Course | Contact hours/week | | | Distribution of Marks for Examination | | | | | | Credits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Internal | | External | | Total | | |
| | | | Th | Pr | Total | Th | Pr | Th | Pr | Th | Pr | |
| CH-450 | Core | Chemistry of Natural Products | 04 | -- | 04 | 40 | -- | 60 | -- | 100 | -- | 04 |
| CH-451 | Core | Synthetic Methods in Organic Chemistry | 04 | -- | 04 | 40 | -- | 60 | -- | 100 | -- | 04 |
| CH-452 | Elective | Choose one out of two CH-452 A/B (A) Drug Chemistry (B) Applied Organic Chemistry | 04 | -- | 04 | 40 | -- | 60 | -- | 100 | -- | 04 |
| *CH-O-2 | Core Skill base | Organic Chemistry Practical Course-II | -- | 12 | 12 | -- | 40 | -- | 60 | -- | 100 | 06 |
| *CH-O-3 | Core Skill base | Organic Chemistry Practical Course-III | -- | 12 | 12 | -- | 40 | -- | 60 | -- | 100 | 06 |
| *CH-O-4 | Core Skill base | A Short Research Project | -- | 12 | 12 | -- | 40 | -- | 60 | -- | 100 | 06 |

## CH-O-4: A Short Research Project

## (180Hrs, 100 Marks and 6 Credits)

**Course Objectives:**

**CO-1**. To make students familiarize themselves with the techniques such as synthesis, isolation, purification and characterization/analysis etc.

**CO-2**. To introduce students on how to generate new ideas based on literature survey and their Execution.

**CO-3**. To foster the self-confidence amongst the students to think and execute ideas Independently.

The project is allotted during the third semester. The students will get an opportunity to become a part of ongoing research activities in the respective supervisor's laboratory. This should make them familiar with the literature survey and the fundamental understanding of how to devise research methodology.It is expected that the student should learn the synthesis, isolation, purification and characterization techniques whatever applicable for their projects. Students whose projects are dependent on the instruments are expected to know SOP and their working principles. Full flexibility is given to the student in identifying the project depending on the resources and infrastructure available in the host organization. It is recommended to work on multidisciplinary projects but not mandatory. In any case, not more than 2-3 students should involve in the same project.

**The systematic approach towards the execution of the project should be as follows:**

1. Selection of topic relevant to priority areas of chemistry and allied sciences
2. Literature survey and devising research methodology based on the gaps in the literature
3. Good laboratory practices: Safety, MSDS, disposal of chemical waste etc.
4. Execution of the project by designing and performing suitable experiments
5. Interpretation of results and drawing important conclusions
6. To prepare a PowerPoint presentation using modern ICT tools
7. Students should present their research work in Avishkar/Webinars/Conferences
8. Maintaining lab notebooks and writing monthly progress report
9. Writing a dissertation with following components in a given order: Title of the Project, Certificates, Acknowledgement, Abstract and Keywords, Contents, Introduction, Literature, Aim of the Project,Materials and Methods, Results and Discussion, Conclusions and Future Perspectives, Contributions, Bibliography and References. Total three bound copies of the dissertation should be prepared (library, guide and student: each one copy). Student should note that plagiarism is strictly prohibited. Beside writing dissertation, students should write a manuscript/patent if the results obtained are worthy of publication.

10. Presentation during the university examination
11. The complete tenure of research project should be of one year. It should start at the third semester and will be end by the semester fourth.
12. Student should submit two progress report within the span of the project.
13. Student should be encouraged for applied and contemporary research work.
14. Weakly two days should be allotted to research project in a regular time table.
15. Each research group should not have more than four students.
16. Each research group should have different research topic

It highly recommended that the students should apply for the Summer Research Fellowship Programmes initiated by Science Academies of India - IAS, INSA, NASI. Similarly, there exist several other summer internship opportunities in the national institutes, reputed universities and industries. Students should explore these possibilities immediately after the completion of the second semester (M. Sc., Part - 1) meaning that applications should be sent much earlier. The exposure gained during the summer internship should build enough confidence amongst students to identify the right research project and its execution.

**Examination Assessment (100 Marks)**:

**Internal Examination (Internal Assessment)** - 40 marks:

| Activity | Marks |
|---|---|
| Submission of progress reports signed by supervisor (at least 2reports, 05 marks per report) | 10 |
| Outline of research work: - literature collected, experiment planning and design | 08 |
| Experimental work performed | 08 |
| Subject/topic related one workshop/course/instrumentation training (online/offline), | 10 |
| Regular attendance maintained by Research Supervisor | 04 |

**External Examination (External Assessment)** - 60 marks:

| Activity | Marks |
|---|---|
| Selection of topic of project work | 05 |
| Literature review | 05 |
| Characterization of intermediates / products | 10 |
| Overall quality of dissertation | 10 |
| Power point presentation | 15 |
| Oral discussion | 10 |
| Conference / Industrial Visit /Avishkar Participation | 05 |

**Suggested readings**: Reference Books/Reviews/Journal Papers as suggested by the supervisor.

| Course Outcomes (COts): | | |
|---|---|---|
| Upon the completion of course, the student should be able: | | |
| **CO No.** | **CO** | **Cognitive level** |
| 1 | To generate new research ideas based on the comprehensive literature survey | 3 |
| 2 | To acquire skill to execute the research project independently | 2 |
| 3 | To expertise in synthesis techniques and execution of research ideas would make the student quickly employable; either in industries or in academia for pursuing higher studies | 4 |

# कवयित्री बहिणाबाई चौधरी
# उत्तर महाराष्ट्र विद्यापीठ, जळगाव

मानव्य विद्याशाखा

NEP 2020 नुसार

एम.ए.मराठी

सत्र पहिले व दुसरे

(शैक्षणिक वर्ष २०२३-२४ पासून लागू)

## अभ्यासपत्रिका क्र.1

सत्र पहिले

P.G.DSC-1 MAR-411

मराठी वाङ्मयाचा इतिहास (प्रारंभ ते १८१८)

सत्र दुसरे

P.G.DSC-5 MAR-511

मराठी वाङ्मयाचा इतिहास (१८१८ ते १९२०)

## अभ्यासपत्रिका क्र.2

सत्र पहिले

P.G.DSC-2 MAR-412

समीक्षाशास्त्र

सत्र दुसरे

P.G.DSC-6 MAR-512

आधुनिक भाषाविज्ञान

## अभ्यासपत्रिका क्र.3

सत्र पहिले

P.G.DSC-3MAR-413

ग्रामीण साहित्य

सत्र दुसरे

P.G.DSC-7MAR-513

दलित साहित्य

## अभ्यासपत्रिका क्र.4

सत्र पहिले

P.G.DSC-4 MAR-414

मराठी भाषा आणि कौशल्ये विकास

सत्र दुसरे

P.G.DSC-8 MAR-514

मराठी भाषा आणि तंत्रज्ञान

**कवयित्री बहिणाबाई चौधरी उत्तर महाराष्ट्र विद्यापीठ, जळगाव**

**एम.ए.मराठी सत्र पहिले व दुसरे**

| CBCS (2021-2022) | NEP (2020) 2023-2024 |
|---|---|
| PGMAR-101 वाङ्मयीन कालखंडाचा अभ्यास (मध्ययुगीन कालखंड)<br>PGMAR-202 वाङ्मयीन कालखंडाचा अभ्यास (अर्वाचीन व आधुनिक कालखंड) | P.G.DSC- 1 MAR-411 मराठी वाङ्मयाचा इतिहास (प्रारंभ ते १८१८)<br>P.G.DSC-5MAR-511 मराठी वाङ्मयाचा इतिहास (१८१८ ते १९२०) |
| PGMAR-102 साहित्य समीक्षा, सिद्धांत<br>PGMAR-202 साहित्य समीक्षा उपयोजन | P.G.DSC-2MAR-412 समीक्षाशास्त्र<br>P.G.DSC-6MAR-512 आधुनिक भाषाविज्ञान |
| PGMAR-103 आधुनिक गद्य वाङ्मय प्रकार-कथा<br>PGMAR-203 आधुनिक गद्य वाङ्मय प्रकार-कादंबरी | P.G.DSC-3MAR-413 ग्रामीण साहित्य<br>P.G.DSC-7MAR-513 दलित साहित्य |
| PGMAR-104 A विशीष्ट लेखकाचा अभ्यास-महात्मा ज्योतिबा फुले<br>PGMAR-204 A लिंगभाव आणि मराठी साहित्य | P.G.DSC-4MAR-414 मराठी भाषा आणि कौशल्ये विकास<br>P.G.DSC-8MAR-514 मराठी भाषा आणि तंत्रज्ञान |
| PGMAR-104 B आधुनिक माध्यमे आणि लेखन व्यवहार<br>PGMAR-204 B मराठी अनुवाद आणि संगणक लेखन | P.G.DSE-1MAR-415 (A) वाङ्मय प्रकार-चरित्र OR<br>P.G.DSE-1MAR-415 (B) आत्मकथन OR<br>P.G.DSE-1MAR-415 (C) स्वयंम कोर्स<br>P.G.DSE-2MAR-515 (A) वाङ्मय प्रकार-कादंबरी OR<br>P.G.DSE-2MAR-515 (B) प्रवासवर्णन OR<br>P.G.DSE-2MAR-515 (C) स्वयंम कोर्स |
| PGAC 101 Practicing Cleanlines | P.G.DSE-RM-MAR-416 संशोधन पद्धती<br>P.G.DSE- OJT-MAR-516 प्रकाशन व्यवहार |
| ANYONE FROM PG AC 201 (A) SOFT SKILL/<br>PGAC 201 (B) Practicing Sports Activities/<br>PGAC 201 (C) Practicing Yoga<br>PGAC 201 (D) Introduction of Indian Music | --- |

**KavayitriBahinabaiChaudhari North Maharashtra University, Jalgaon**
**FACULTY OF Humanities , M.A. PROGRAMME**
**Credit distribution structure for Two years/One-year PG MA programme**
**BoS: Marathi**
**Teaching and Examination scheme : M.A. (Level 6.0) Sem- II**

| Sr. No. | Course Category | Name of the course (Title of the Paper) | | Total Credit | Hours/ Semester | Teaching Scheme (hrs/weeks) | | Evaluation Scheme | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Theory/Practical | | Continuous Internal Evaluation (CIE) (CA) | End Semester Evaluation (ESE) (UA) | Duration Examination (hrs) |
| | | | | | | T | P | | | |
| 01 | DSC | DSC-5 | मराठीवाङ्मयाचाइतिहास (१८१८ ते १९२०) | 04 | 60 | 04 | -- | 40 | 60 | 03 |
| | | DSC-6 | आधुनिक भाषाविज्ञान | 04 | 60 | 04 | -- | 40 | 60 | 03 |
| | | DSC-7 | दलित साहित्य | 04 | 60 | 04 | -- | 40 | 60 | 03 |
| | | DSC-8 | मराठीभाषाआणितंत्रज्ञान | 02 | 30 | 02 | -- | 20 | 30 | 1.30 |
| 02 | DSE | DSE-2 A | वाङ्मय प्रकार-कादंबरी | 04 | 60 | 04 | -- | 40 | 60 | 03 |
| | | OR B | वाङ्मय प्रकार-प्रवास वर्णन | | | | | | | |
| | | OR C | स्वयंमकोर्स | | | | | | | |
| 03 | OJT/INT | OJT/INT | प्रकाशनव्यवहार | 04 | 60 | | | | | |
| | | | **Total** | **22** | **330** | **18** | | | | **13.30** |

**KavayitriBahinabaiChaudhari North Maharashtra University, Jalgaon**
**FACULTY OF Humanities , M.A. PROGRAMME**

## Credit distribution structure for Two years/One-year PG MA programme

## BoS: Marathi

## Teaching and Examination scheme : M.A. (Level 6.0) Sem- III

| Sr. No. | Course Category | Name of the course (Title of the Paper) | | Total Credit | Hours/ Semester | Teaching Scheme (hrs/weeks) | | Evaluation Scheme | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Theory/Practical | | Continuous Internal Evaluation (CIE) (CA) | End Semester Evaluation (ESE) (UA) | Duration Examination (hrs) |
| | | | | | | T | P | | | |
| 01 | DSC | DSC-9 | वाङ्मयीन वाद | 04 | 60 | 04 | -- | 40 | 60 | 03 |
| | | DSC-10 | लोकसाहित्य व खान्देशी लोकसाहित्य | 04 | 60 | 04 | -- | 40 | 60 | 03 |
| | | DSC-11 | वैचारिक साहित्य | 04 | 60 | 04 | -- | 40 | 60 | 03 |
| | | DSC-12 | भाषण व संवाद कौशल्ये | 02 | 30 | 02 | -- | 20 | 30 | 1.30 |
| 02 | DSE | DSE-3 A | वाङ्मय प्रकार-कविता | 04 | 60 | 04 | -- | 40 | 60 | 03 |
| | | OR B | वाङ्मय प्रकार-आत्मचरित्र | | | | | | | |
| | | OR C | स्वयंमकोर्स | | | | | | | |
| 03 | Research Project | RP | संशोधन प्रकल्प | 04 | 60 | -- | -- | -- | -- | -- |
| | | | **Total** | **22** | **330** | **18** | **--** | **--** | **--** | **13.30** |

**KavayitriBahinabaiChaudhari North Maharashtra University, Jalgaon**
**FACULTY OF Humanities , M.A. PROGRAMME**
**Credit distribution structure for Two years/One-year PG MA programme**
**BoS: Marathi**
**Teaching and Examination scheme : M.A. (Level 6.0) Sem- IV**

| Sr. No. | Course Category | Name of the course (Title of the Paper) | | Total Credit | Hours/ Semester | Teaching Scheme (hrs/weeks) | | Evaluation Scheme | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Theory/Practical | | Continuous Internal Evaluation (CIE) (CA) | End Semester Evaluation (ESE) (UA) | Duration Examination (hrs) |
| | | | | | | T | P | | | |
| 01 | DSC | DSC-13 | समाजभाषाविज्ञान | 04 | 60 | 04 | -- | 40 | 60 | 03 |
| | | DSC-14 | स्त्रीवादी साहित्य | 04 | 60 | 04 | -- | 40 | 60 | 03 |
| | | DSC-15 | आदिवासी साहित्य | 04 | 60 | 04 | -- | 40 | 60 | 03 |
| 02 | DSE | DSE-4 A | वाङ्मय प्रकाराचा अभ्यास-कथा | 04 | 60 | 04 | -- | 40 | 60 | 03 |
| | | OR B | चित्रपट व पटकथा लेखन | | | | | | | |
| | | OR C | स्वयंमकोर्स | | | | | | | |
| 03 | Research Project | RP | संशोधन प्रकल्प | 06 | 90 | -- | -- | -- | -- | -- |
| | | | Total | 22 | 330 | 16 | - | -- | -- | 12 |

॥अंतरी पेटवू ज्ञानज्योत॥

**KAVAYITRI BAHINABAI CHAUDHARI**
**NORTH MAHARASHTRA UNIVERSITY, JALGAON**

1990

'A' Grade
NAAC Re-Accredited
(4th Cycle)

# Syllabus for
# M.A. ECONOMICS

First Year (SEMESTER I and II)

**FACULTY OF HUMANITIES**

With effect from Academic Year – 2023-2024 for I[st] Year

(Syllabus Structure under revised NEP 2020 Pattern for PG Course in the Subject of Economics)

**Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon**

**FACULTY OF Humanities, M.A. PROGRAMME**

**Credit distribution structure for Two years/One-year PG MA programme**

**ECONOMICS**

**M.A. (Level 6.0)**

| M.A. Economics Programme Structure as per NEP Guidelines wef- 2023-24 | | | | |
|---|---|---|---|---|
| | **Course Category** | **Paper Code** | **Name of the course(Title of the Paper)** | **Total Credit** |
| **SEM-I** | DSC-1 | ECO-411 | Advanced Microeconomic Analysis-I | 4 |
| | DSC-2 | ECO-412 | Public Finance-I | 4 |
| | DSC-3 | ECO-413 | Agricultural Economics-I | 4 |
| | DSC -4 | ECO-414 | Statistics-I | 2 |
| | DSE-1 | ECO-415 | A. Industrial Economics-I<br>B. Environment Economics-I<br>C. Rural Development | 4 |
| | RM | ECO-416 | Research Methodology for Economics-I | 4 |
| | | | Total | **22** |
| | | | | |
| **SEM-II** | **Course Category** | **Paper Code** | **Name of the course(Title of the Paper)** | **Total Credit** |
| | DSC-5 | ECO-421 | Advanced Microeconomics Analysis-II | 4 |
| | DSC-6 | ECO-422 | Public Finance-II | 4 |
| | DSC-7 | ECO-423 | Agricultural Economics-II | 4 |
| | DSC -8 | ECO-424 | Statistics-II | 2 |
| | DSE-2 | ECO-425 | A. Industrial Economics-II<br>B. Environment Economics-II<br>C. Demographic Economics | 4 |
| | OJt/ Int. | ECO-426 | On Job Training/ Internship | 4 |
| | | | Total | **22** |

Kavayitri Bahinabai Chaudhari

# North Maharashtra University

Jalgaon

Academic Curriculum

## M.Sc. Part - I

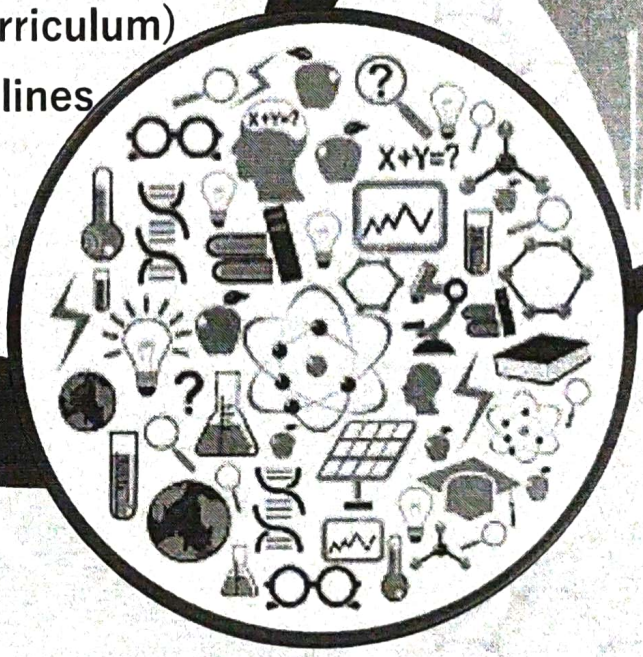
## Subject: Chemistry

(Semester I and II)

Based on NEP-2020

(Outcome Based Curriculum)

As Per U.G.C. Guidelines




NATIONAL EDUCATION POLICY 2020

Prepared

By

BoS Chairman,

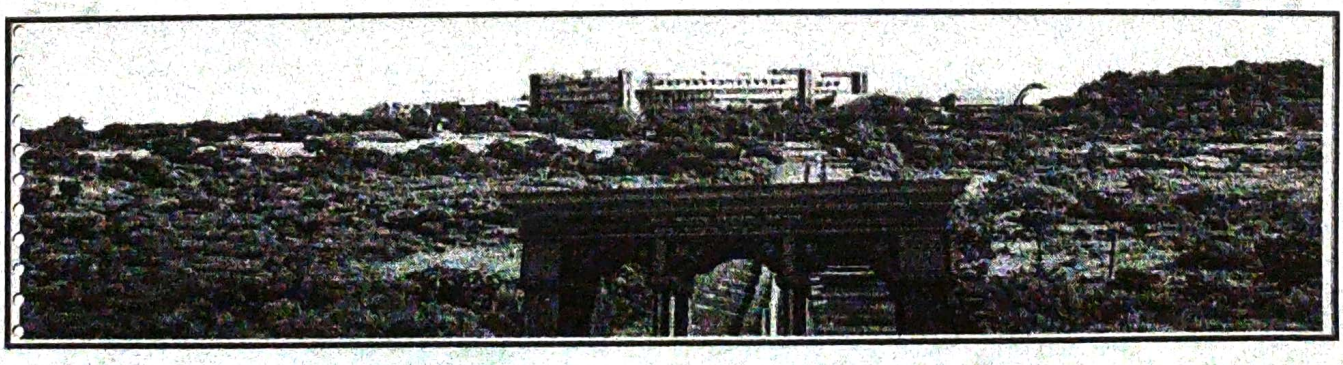
Members of Board of Studies and

The Experienced Teachers in Chemistry,

KBCNMU, Jalgaon

To Be Implemented From

Academic Year 2023-24



# M. Sc. (level 6.0) Sem-II

(Name of Courses for–Major, Minor, GE, VSEC, IKS courses)

| Sr No | Course Category | Name of the course (Title of the Paper) | | Total Credit | Hours /Semester | Teaching Scheme (hrs/week) | | Evaluation Scheme | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Theory | Practical | CIE(CA) | ESE (UA) | Duration of Examination (Hrs) |
| | | | | | | T | P | | | |
| 1 | DSC | DSC-30 | Advanced Physical Chemistry-II | 4 | 60 | 4 | - | 40 | 60 | 3 |
| | | DSC-31 | Chemistry Practical-IV (Physical Chemistry) | 2 | 60 | - | 4 | 20 | 30 | 6 |
| | | DSC-32 | Advanced Organic Chemistry-II | 4 | 60 | 4 | - | 40 | 60 | 3 |
| | | DSC-33 | Chemistry Practical-V (Organic Chemistry) | 2 | 60 | - | 4 | 20 | 30 | 6 |
| | | DSC-34 | Chemistry Practical-VI (Inorganic Chemistry) | 2 | 60 | - | 4 | 20 | 30 | 6 |
| 2 | DSE | DSE-6 | A) Advanced Inorganic Chemistry-II | 4 | 60 | 4 | - | 40 | 60 | 3 |
| | | | B) Industrial Safety and Good laboratory Practices | 4 | 60 | 4 | - | 40 | 60 | 3 |
| 3 | OJT/Int | OJT/Int | On Job Training or Internship | 4 | 120 | - | 8 | 40 | 60 | 3 |
| | | | **Total** | **22** | | **12** | **16** | **220** | **330** | |

DSC: Discipline Specific Course, DSE: Discipline Specific Elective
RM: Research Methodology CIE: Continuous Internal Evaluation
ESE: End Semester Evaluation

**Important points:**

i. For theory courses one credit is equivalent to 15 lectures of 60 minutes each and for practical courses one credit is equivalent to 30 lectures of 60 minutes each.
ii. There will be 12 practical sessions per semester of 4 hours each.
iii. Total weeks for teaching and internal evaluation are 15. Out of the 15 weeks, 12 weeks are for teaching and 03 weeks for internal evaluation (Theory as well as Practical).
iv. **Exit Option**: PG Diploma after one Year of PG Programme (44 Credits)

# Syllabus for M.Sc. Part-I Chemistry

**(Semester - I & II)**

**Course Structure for First Year**

| Course Code | Course Code | Course Type | Title of the Course |
|---|---|---|---|
| **Semester –I** | | | |
| DSC-25 | CH-411 | Core | Advanced Physical Chemistry-I |
| DSC-26 | CH-412 | Core | Chemistry Practical-I (Physical Chemistry) |
| DSC-27 | CH-413 | Core | Advanced Organic Chemistry-I |
| DSC-28 | CH-414 | Core | Chemistry Practical-II (Organic Chemistry) |
| DSC-29 | CH-415 | Core | Chemistry Practical-III (Inorganic Chemistry) |
| DSE-5 | CH-416A | Elective | Advanced Inorganic Chemistry-I |
| | CH-416B | Elective | Advanced Analytical Chemistry-I |
| RM | RM-417 | RM | Research Methodology |
| **Semester– II** | | | |
| DSC-30 | CH-421 | Core | Advanced Physical Chemistry-II |
| DSC-31 | CH-422 | Core | Chemistry Practical-IV (Physical Chemistry) |
| DSC-32 | CH-423 | Core | Advanced Organic Chemistry-II |
| DSC-33 | CH-424 | Core | Chemistry Practical-V (Organic Chemistry) |
| DSC-34 | CH-425 | Core | Chemistry Practical-VI (Inorganic Chemistry) |
| DSE-6 | CH-426A | Elective | Advanced Inorganic Chemistry-II |
| | CH-426B | Elective | Industrial Safety and Good laboratory Practices |
| OJT/Int | CH-427 | OJT/Int | On Job Training or Internship |

DSC: Discipline Specific Course, DSE: Discipline Specific Elective
RM: Research Methodology, OJT: On Job Training