# GOVERNMENT ARTS COLLEGE FOR MEN

## (Autonomous)

## NANDANAM, CHENNAI – 600 035.

## DEPARTMENT OF CHEMISTRY

## COURSE OUTCOME FOR

## M.Sc., Degree Course in Chemistry

**Semester System**

**(Two Year PG Degree Course)**

**CHOICE BASED CREDIT SYSTEM**

**Effective from the Academic Year**

**2019- 2020**

**GOVERNMENT ARTS COLLEGE FOR MEN (AUTONOMOUS), NANDANAM, CHENNAI - 600035.**

**M.Sc., Chemistry**

## COURSE OUTCOME

| | COURSE | SUBJECT CODE | TITLE | OUTCOME |
|---|---|---|---|---|
| SEMESTER I | | | | |
| | Core I | 196301 | Organic Chemistry I | Gives basic knowledge about organic reactions |
| | Core II | 196302 | Physical Chemistry I | In this course, students understand the advanced concepts of quantum mechanics, group theory, chemical kinetics and catalysis. |
| | Core III | 196303 | Organic Chemistry Practicals I | To impart hands on experience in inorganic chemistry via practicals in analysing organic compounds |
| | Core IV | 196304 | Inorganic Chemistry Practicals I | To impart hands on practical training in various volumetric and gravimetric techniques as well as inorganic preparations. |
| | Elect-I | 196321 | Bio Inorganic Chemistry | Throws light on reactions required for synthesis of various chemical compounds and general methods involved in them |
| | Elect-II | 196322 | Modern Organic Synthetic Methods | Throws light on reactions required for synthesis of various chemical compounds and general methods involved in them |
| | SS – I | 195001 | Soft Skill – I | |
| **SEMESTER II** | | | | |
| | Core V | 196305 | Inorganic Chemistry I | This course gives in-depth knowledge about Crystal field, MO theories and electronic spectra of Coordination compounds |
| | Core VI | 196306 | Organic Chemistry II | Gives more knowledge about the 3D structures of organic compounds and knowledge to assess them using retro synthetic analysis. These are very important for drug designing in Pharma industry |
| | Core VII | 196307 | Organic Chemistry Practicals II | To impart hands on experience in organic chemistry via practicals in preparing organic compounds and quantitatively determining them |
| | Core VIII | 196308 | Inorganic Chemistry Practicals II | To impart hands on experience in inorganic chemistry via practicals in semi micro qualitative analysis and inorganic estimation using photoelectric colorimeter. |
| | Elect- III | 196323 | Organometallic Chemistry | This course gives deeper understanding of organometallic compounds with special emphasis on reactions and catalysis by organometallics, structure and bonding in metal carbonyls and polymerization of olefins. |
| | SS- II | 195002 | Soft Skill II | |
| **SEMESTER III** | | | | |
| | Core IX | 196309 | Inorganic Chemistry II | This course gives in-depth knowledge about chemical bonding, nuclear chemistry and solid state chemistry |

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| | Core X | 196310 | Physical Chemistry II | This course gives in-depth knowledge about the concept of quantum mechanics, statistical thermodynamics, electro chemistry, chemical kinetics and polymer science. |
| | Core XI | 196311 | Physical Chemistry Practicals I | To impart hands on practical training in various non-electrical and electrochemical techniques. |
| | Elect – IV | 196324 | Molecular Spectroscopy | In this industrial oriented course, students learn concepts of electromagnetic radiation, IR, Raman, UV-visible, PES, XPES and Laser techniques. |
| | EDC II | 196242 | Energy Physics (handled by Physics Dept) | |
| | SS- III | 195003 | Soft Skill – III | |
| | | 196381 | Internship* | |
| | | | Library, Seminar and Group discussion** | |
| SEMESTER IV | | | | |
| | Core XII | 196312 | Natural Products and Heterocyclic Chemistry | Gives broad spectrum knowledge about the naturally occurring compounds and their synthesis and structural elucidations |
| | Core XIII | 196313 | Analytical Chemistry | In this industrial oriented course, students learn concepts of chromatographic techniques, AAS, FEP, colorimetry, nephelometry and turbidimetry, fluorometry, electro gravimetric analysis, coulometry, TGA and Mass Spectrometry. |
| | Core XIV | 196314 | Physical Chemistry Practicals II | To impart hands on practical training in electrochemical techniques.<br>Estimation and identification of ions by various instrumental methods of analysis. |
| | Core XV | 196315 | Project Work | To impart knowledge on research methodologies and inculcate interest on higher studies and research |
| | Elect –V | 196325 | Resonance Spectroscopy | In this industrial oriented course, students learn concepts of NMR, NQR, Massbauer and EPR spectroscopic techniques. |
| | SS – IV | 195004 | Soft Skill - IV | |

*Internship will be carried out during summer vacation of first year and the same will be included in the third semester Marks statement.

**To acquire in-depth knowledge in the subject and inter personality skills

**Subjects handled by Chemistry department staff for other PG departments**

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| EDC I | 196341 | Medicinal Chemistry I | This course gives the basic understanding of medicinal chemistry with special emphasis on first aids, antipyretics and anti-inflammatory drugs, anesthetics, tranquilizers and hypnotics. |
| EDC II | 196342 | Medicinal Chemistry II | Gives broad spectrum knowledge about the science of blood and various diseases and their ailments. |