# GOVERNMENT ARTS COLLEGE FOR MEN

## (Autonomous)

## NANDANAM, CHENNAI – 600 035.

## DEPARTMENT OF PHYSICS

## COURSE OUTCOME FOR

## BSc Degree Course in PHYSICS

**Semester System**

**(Three Year UG Degree Course)**

**CHOICE BASED CREDIT SYSTEM**

**Effective from the Academic Year**

**2019 - 2020**

**GOVERNMENT ARTS COLLEGE FOR MEN (AUTONOMOUS), NANDANAM, CHENNAI-35**

**B.Sc. PHYSICS (CBCS with soft skills) – SCHEME OF EXAMINATION**
**(For candidates joining the course from the academic year 2019-2020 onwards)**

# COURSE OUTCOME

| SEM | PART | SUB CODE | TITLE | COURSE OUTCOME |
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| I | III | 192201 | SOUND | *On completion of the course, the student will be able to know the basic theories behind the production of sound waves, the concepts of acoustic comfort and better understanding of the theories used in building acoustics and different methods of producing ultrasonic waves and its applications* |
| II | III | 192203 | HEAT, THERMODYNAMICS AND STATISTICAL MECHANICS | *On completion of the course, the student will be able to know the different laws of thermodynamics, function of engines, concepts of thermal conductivity and the concepts of kinetic gases and basics of statistic mechanics.* |
| III | III | 192204 | PROPERTIES OF MATTER | *On completion of the course, the student will be able to identify the materials suitable for construction of buildings based on the moduli of elasticity and have a deeper knowledge on the properties of liquids/gases* |
| III | III | 192205 | MECHANICS AND MATHEMATICAL METHODS | *On completion of the course, the student will be able to define impulse, momentum and collisions, study of the interaction of forces between solids in mechanical systems and find the Eigen values and Eigen vectors to diagonalise and reduce a matrix* |
| IV | III | 192207 | OPTICS AND SPECTROSCOPY | *On completion of the course, the student will be* |

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| | | | | *able to understand the physics behind various phenomenon in optics and spectroscopy, various phenomenon and the cause or origin of them, know the interaction between matter and electromagnetic radiation, explain that ultraviolet spectroscopy is useful for studying some organic compounds, understand that Infrared spectra and Raman spectroscopy can be used to indicate the presence of particular functional groups in unknown organic compounds by the presence of characteristic features* |
| **IV** | **III** | **192208** | **ELECTRICITY AND ELECTROMAGNETISM** | *On completion of the course, the student will be able to design and trouble shoot the electrical circuits, network, appliances through hands –on mode, identify materials from their atomic structure.* |
| **V** | **III** | **192209** | **ANALOG ELECTRONICS** | *On completion of the course, the student will be able to design, analyze and apply the electronic circuits for many day-to-day applications* |
| **V** | **III** | **192210** | **CLASSICAL MECHANICS, QUANTUM MECHANICS AND RELATIVITY** | *On completion of the course, the student will be able to know the basic concept of classical,quantum and relativity* |
| **V** | **III** | **192221** | **8085 MICROPROCESSOR AND ITS INTERFACING** | *On completion of the course, the student will be able to understand the architecture of microprocessor 8085 and write basic programming using it and also able to interface I/O devices for practical applications* |
| **V** | **III** | **192222** | **COMMUNICATION ELECTRONICS** | *On completion of the course, the student will be able to understand the basic concept used in* |

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| | | | | *communications along with the concept of digital, satellite and fiber optic communications.* |
| **I&II**<br>**III&IV**<br>**V&VI**<br>**V&VI** | **III** | **192202,**<br>**192206,**<br>**192211,**<br>**192212,** | **PRACTICALS –I**<br>**PRACTICALS –II**<br>**PRACTICALS III**<br>**PRACTICALS IV** | Have understood and prepared to apply the knowledge gained through laboratory sessions on basic experiments involving sound, light, heat, electricity and magnetism, electronics, microprocessor 8085 and its interfacing, basic problem solving using C programming language in research fields and industries |
| **VI** | **III** | **192213** | **ATOMIC AND NUCLEAR PHYSICS** | *On completion of the course, the student will be able to know the very basic structure of nucleus and nucleon configuration, the various atomic spectra and fine structure, the idea of different types of nuclear models and types of radioactivity, the different detectors available to identify the nuclear radiation, the types of fission process and nuclear reactions and the idea of elementary particles and its types* |
| **VI** | **III** | **192214** | **SOLID STATE PHYSICS** | *On completion of the course, the student will be able to summarize how crystalline materials are studied, able to discuss about the interatomic forces and bonds between solids, explain the behavior of solids with their magnetic properties, analyze the importance of superconducting materials in engineering applications* |
| **VI** | **III** | **192215** | **DIGITAL ELECTRONICS** | *On completion of the course, the student will be able to*<br>• *Convert numbers* |

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| | | | | *from one system to another*<br>• *Construction and truth tables of various logic gates*<br>• *Recollect laws and theorems of Boolean algebra for simplification*<br>• *Draw Karnaugh map*<br>• *Elaborate the functions of flip flops and counters*<br>• *Understand the construction of multiplexers and de multiplexers*<br>*Convert analog to digital and vice versa.* |
| **VI** | **III** | **192223** | **C PROGRAMMING** | *On completion of the course, the student will be able write codes for basic scientific problems using C programming language* |
| **III** | **III** | **192261** | **ALLIED PHYSICS I** | *On completion of the course, the Mathematics and Chemistry students will be able to know the different branch of physics, waves and oscillation, properties of matter and Heat and thermodynamics, the concepts of electricity and magnetism and Geometrical optics.* |
| **III&IV** | **III** | **192263** | **ALLIED PHYSICS PRACTICALS** | Have understood and prepared to apply the knowledge gained through laboratory sessions on basic experiments involving sound, light, heat, electricity and magnetism, electronics. |
| **IV** | **III** | **192262** | **ALLIED PHYSICS II** | *On completion of the course, the Mathematics and Chemistry students will be able to know the different area of physics involving the velocity of light, Nuclear reactor, the concepts of* |

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| | | | | *semiconductors and digital electronics* |
| **I** | **IV** | **192241** | **SOLAR ENERGY AND ITS APPLICATIONS** | *On completion of the course, the student will be able to know the importance of saving energy and need for utilizing alternative resources such as solar energy* |
| **II** | **IV** | **192242** | **ASTROPHYSICS** | *On completion of the course, the student will be able to identify simple astronomical events and do some basic celestial measurements.* |