A.V.Education Society's
DEGLOOR COLLEGE, DEGLOOR

➢ Programme Specific Outcomes – (Physics)

- **After completing this specific programme BSC) – (Physics)**

1. . Improvement in the quality of higher education
2. . Deserves to be given to enable the young generation of students to acquire skills, training and knowledge to enhance their thinking, comprehensive and application abilities
3. Upgrading academic resources and learning environments.
4. . Science programme should make students centric ,interactive and outcome oriented.
5. . To motivate and inspire to students to create deep interest in science.
6. To develop broad and balanced knowledge and understanding science.
7. . The programme also empowers the graduates to appear for various competitive examinations. The students can choose the post graduate programme of their choice

- **After completing this specific programme - BSC) – (Physics)**

1. . **Disciplinary knowledge and skills :** Good knowledge and understanding major concepts of theoretical principle and experimental findings in physics.
2. . **Ability:** Ability to use modern instruments, laboratory techniques and design.
3. **Skilled communicator:** Ability to transmit complex technical information in physics.
4. **Critical thinker:** Ability to employ critical thinking.
5. **Problem solver:** Ability to develop efficient problem solving skill.

6. **Ethical awareness:** Capable of demonstrating ability to think and analyze rationally with modern and scientific look..

- **Course Outcomes – (Physics -)**

Under Graduate (Course Outcomes)

B.Sc. First Year

Semester – I (Paper-wise)

1. Name of the Paper – I **Mechanics and Properties of matter.**
    a. Students should understand motion and their applications in various dynamical situations.
    b. Students should revise the knowledge of scalars, vector Units and dimensions and these are essentials in solving problems.
    c. To introduce about gravity, laws and different parameters
    d. Concept of properties like viscosity, surface tension and elasticity can be explained and has grate importance in day to day life
2. Name of the Paper – II **Mathematical Methods in Physics**
    a. . Students should revise the knowledge of calculus, vector and probability and these are essentials in solving problems.
    b. . Explains and differentiate vector and scalar field
    c. . Partial differential equations are used to formulate and solution of physical and other problems involving functions of several variable such as sound, heat electricity
    d. . Fourier series is used to represent periodic function by a discrete sum of complex exponentials

Semester – II

1. Name of the Paper – III **Heat and Thermodynamics**
    a. . To study the basics of heat and its different forms

b. . Basic concept of thermodynamics and basic aspect of kinetic theory

c. . Carnot's cycle and engine is basic of all heat engines and make use of properties of thermodynamics to transform heat into work

d. . Behavior of different gases and systems are important part of life

2. Name of the Paper – IV **Electricity and Magnetism**

a. To introduce to students concept of statics and dynamical electrical magnetic field

b. . To introduce to students the sources for generating electrical and magnetic fields

c. . Understand the basic difference between AC and DC circuits and their functioning

d. . Understand the roll of electricity in day to day life

3. Name of the Paper – V **Practical course in Physics (Annual)**

a. In laboratory students perform experiments relating mechanics, properties of matter, thermal conductivity electricity and magnetism.

b. Knowledge through experiments

c. Handling and understanding experimental arrangements

B.Sc. Second Year

Semester – III

Name of the Paper – VI **Waves and Oscillations**

a. To introduce to students concept of mechanical waves and their properties

b. To introduce to students to sources for generating mechanical waves

c. Understand the basic difference between progressive waves and stationary waves

d. Understand the roll of acoustics and ultrasonic waves in day to day life

1. Name of the Paper – VII **Statistical Physics, Electromagnetism and Theory of Relativity**

e. To introduce to students concept of microscopic and microscopic world

f. To introduce to students Maxwell's equations and their applications in electromagnetic waves

g. Understand the basic difference between relativistic and non-relativistic mechanisms

h. Understand roll of statistical mechanics in day to day life

2. SEC I (Electrical Measurements)

a. . Acquire skill related to measurement of electrical quantities

b. . Students will learn skills selecting meters of proper scales

c. . Students will learn skills connecting and handling instruments

d. . Gaining hands on training

Semester – IV

1. Name of the Paper – VIII **Optics and Lasers**

a. To introduce to students concept of optics and its applications

b To introduce to students properties of light such as interference, polarization diffraction etc

c Understand the basic difference between Interference and diffraction

d. Understand the roll of laser in day to day life.

2. Name of the Paper – IX Basic Electronics

a. . To understand the concept of semiconductor, semiconductor diodes and their characteristics

b. . To know the construction ,working of transistors and their applications

c. To use transistors in different combinations

d. Understand the roll of amplifiers and oscillators in day to day life.

3. SEC – II (Electronics Devices and Equipments)

a Educate students about working and usages of electronic devices

b. Students will enable to know behavior of active and passive devices

c. Students will learn skills designing various electronics circuits

d. Gaining hands on training

4. Name of the Paper - X1.

Practical course in Physics Based on syllabus of paper VI and VIII (Annual)

a. In laboratory students perform experiments relating sound, optics like Lissajous figures, sonometer and Helmholtz resonator , telescope, spectrometer and Polarimeter

b. Knowledge through experiments

c. Handling and understanding experimental arrangements

5. Name of the Paper - XI

Practical course in Physics Based on syllabus of paper VII and IX (Annual)

a. In laboratory students perform experiments relating basic electronics like potentiometer, photocell, Owen's bridges LED and oscillators

b. Acquire knowledge through experiments

c. Handling and understanding experimental arrangements

B. Sc.Third Year

Semester – V

1. Name of the Paper – XII **Quantum Mechanics**

. a. This course will enable the students to get familiar with dual nature of light, matter waves and Uncertainty principle and Schrodinger's equation

b. Understand behavior of quantum particles

c. Introduce to students the world of microscopic particles

d. Make connection between rules governing microscopic particles with that of macroscopic bodies around us

Name of the Paper – XIII **Solid State Physics**

a. Provide fundamental knowledge of crystallography.

b. Principles behind the formation of matter, their structure and physical properties

c. To understand the relation between internal structure and various properties of matter

d. Students will have scope in research of material science

2. SEC – III (Electrical circuit Analysis skill)

a. Create awareness among the students about electrical circuit

b. Enable to check troubleshooting through hands on exercises

c. Students will learn skills connecting and handling instruments

Semester – VI

6. Name of the Paper – XIV **Atomic and Molecular Physics**
    a. . Introduce students to the world of atoms, molecules and nuclii
    b. . Understand the basic atom models, modern concept of atoms and molecules and nuclear phenomenon.
    c. . To understand the interaction of atoms and molecules with electric and magnetic fields
    d. . To understand the nuclear fussion and their applications for mankind
7. Name of the Paper – XV **Digital and Communication Electronics**
    a. Enables to understand importance and interconvertibility of various number systems
    b. Coding and its uses in modern communication system
    c. . Understand students about principle and working of logic gates
    d. . Understand students about principle and working of transmitter and receivers in modern communication system
8. SEC – IV (**Semiconductor Devices Application Skills**)
    a. Create awareness among the students about semiconductor devices
    b. Students will learn skills selecting semiconductor devices
    c. Students will learn skills connecting and handling instruments
9. Name of the Paper - XVI.
    Practical course in Physics Based on syllabus of paper XII and XIV (Annual)

a. In laboratory students perform experiments relating dark room such as Rydberg constant ,Planck's constant and e/m etc

b. Knowledge through experiments

c. Handling and understanding experimental arrangements

10. Name of the Paper - XVII

Practical course in Physics Based on syllabus of paper XIII and XV (Annual)

a. In laboratory students perform experiments relating basic electronics communication like CRO, photocell, crystal structure Laue pattern and rotating crystal

b. Acquire knowledge through experiments

c. Handling and understanding experimental arrangements

Head of the Department **Principal**