

## **(079-E&E-02-02) ELECTRONICS AND COMMUNICATION ENGINEERING (AVIONICS)**

### **Significance of the Program:**

The B.Tech program integrates Electrical, Electronics, and Computer Systems with a focus on the aviation sector. The term "avionics" is coined from the fusion of aviation and electronics. The academic program prioritizes fundamental principles, placing a significant focus on developing research capabilities to tackle the challenges within the domain of electronics crucial for aerospace applications.

### **Career Options:**

After successful completion of this course, candidates can secure jobs in various government and private aviation industries, Airlines, Air Force, Corporate Research Companies, Defense Ministry, Helicopter Manufacturing, Drone Manufacturing, Aviation Companies, Research & Development in the field of Aviation & Space Exploration.

### **Program Objectives:**

1. Graduates will be able to model aeronautical communication systems with morals and ethics through their strong foundation in mathematics, science and engineering.
2. Graduates will be able to apply their knowledge to identify, formulate, and solve engineering problems in the domain of electronics and communication.
3. Graduates will be able to analyze and design appropriate solutions for socially relevant problems by using current engineering techniques and tools.
4. Graduates will be able to assess the networking and communication systems from the viewpoint of quality, security and ethics.
5. Graduates will be able to engage in professional development through effective communication, teamwork and lifelong learning.

### **Outcomes of the Program:**

The student will be able to

1. design and analyze electronic aviation systems, demonstrate proficiency in circuit design, signal processing, and integrated circuit implementation.
2. possess in-depth knowledge of communication systems, including analog and digital communication, wireless communication, and networking, and will be able to apply this knowledge to solve real-world problems.
3. proficient in the design and integrating hardware & software components for IoT applications.
4. apply signal processing techniques to analyze and interpret data, enabling them to work on tasks such as image processing, and the enhancement of signal quality.
5. design and implement digital electronic circuits and microprocessor-based systems, by understanding the architecture and programming of microcontrollers.
6. engage in research and development activities, contribute to the advancement of knowledge in the field of Electronics and Communications Engineering.

**Major Course Outlines:**

1. Fundamental Courses
2. VLSI Design
3. RF and Microwave Engineering
4. Computer Technology
5. Aircraft Control and Guidance
6. Spacecraft Engineering
7. Avionics Systems
8. Navigation Engineering
9. Drone Technology (UAV's)