

Program Structure

Bachelor of Technology in Defence Technology (Communication Systems & Sensors)

Duration: 4 Years

Eligibility: 10+2 with Physics, Chemistry, and Mathematics with required entrance qualification.

Program Overview

This program provides a strong foundation in communication engineering, sensor systems, radar, and defence electronics, preparing students for roles in strategic communications, surveillance, and sensor-based defence platforms.

Semester-wise Structure

Semester I

Course Code	Course Title	Credits
XXXX	Engineering Mathematics I	4
XXXX	Engineering Physics	4
XXXX	Introduction to Defence Communication Systems	3
XXXX	Electrical Circuits and Network Theory	4
XXXX	Programming for Engineers	3
XXXX	Basic Electronics Laboratory	2

Semester II

Course Code	Course Title	Credits
XXXX	Engineering Mathematics II	4
XXXX	Signals and Systems	4
XXXX	Analog Electronics	4
XXXX	Digital Electronics	4
XXXX	Sensor Fundamentals	3
XXXX	Communication Skills and Technical Writing	2

Semester III

Course Code	Course Title	Credits
XXXX	Electromagnetic Fields and Waves	4
XXXX	Analog Communication Systems	4
XXXX	Digital Communication Systems	4
XXXX	Sensor Interfacing and Data Acquisition	3
XXXX	Microcontrollers and Embedded Systems	3
XXXX	Open Elective I	3

Semester IV

Course Code	Course Title	Credits
XXXX	RF and Microwave Engineering	4
XXXX	Communication Networks	4
XXXX	Signal Processing for Defence Applications	4
XXXX	Radar Systems Basics	3
XXXX	Electronic Warfare Fundamentals	3
XXXX	Open Elective II	3

Semester V

Course Code	Course Title	Credits
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XXXX	Antenna and Propagation	4
XXXX	Wireless and Mobile Communication	4
XXXX	Advanced Sensors and Instrumentation	4
XXXX	Satellite and Space Communication	3
XXXX	Defence Sensor Networks	3
XXXX	Mini Project I	2

Semester VI

Course Code	Course Title	Credits
DTCSS-311	Software Defined Radio and Cognitive Radio	4
DTCSS-312	Radar Signal Processing	4
DTCSS-313	Guidance, Navigation and Tracking Systems	4
DTCSS-314	IoT and Cyber-Physical Communication Systems	3
DTCSS-315	Industrial Training / Internship	3
DTCSS-316	Mini Project II	2

Semester VII

Course Code	Course Title	Credits
DTCSS-401	Secure Communication Systems	4
DTCSS-402	Defence Sensor Fusion	4
DTCSS-403	Advanced Radar and Sonar Systems	4
DTCSS-404	Project Phase I	4
DTCSS-405	Elective III	3

Semester VIII

Course Code	Course Title	Credits
DTCSS-411	Communication Systems Design and Innovation	3
DTCSS-412	Project Phase II	8
DTCSS-413	Seminar and Viva Voce	2

Elective Basket

1. Digital Signal Processing for Defence
2. Microwave Imaging Systems
3. AI in Communication Systems
4. Network Security for Sensor Networks
5. UAV Communication Systems
6. Remote Sensing Systems
7. SatCom Payload Design
8. Machine Learning for Signal Analysis

Total Credits

Suggested total: 172 credits including laboratories, projects, internship, and capstone dissertation.