

SIPNA COLLEGE OF ENGINEERING & TECHNOLOGY, AMRAVATI

An Autonomous Institute Affiliated to

Sant Gadge Baba Amravati University, Amravati, Maharashtra (India)

(Approved by AICTE, New Delhi and Recognized by DTE, Maharashtra)

(Accredited With 'A+' Grade by NAAC)



Bachelor of Technology (B. Tech.)

Open Elective Syllabus: Semester V and VI




Department of Electronics and Telecommunication Engineering

(Semester Pattern)

Effective from Academic Year 2026-27

Prepared By: Boards of Studies-Electronics and Telecommunication Engineering

Approved By: Academic Council -Sipna COET, Amravati

			30/03/2026	1.00
Chairman Board of Studies	Dean Academics	Chairman Academic Council	Date of Release	Version



Program:	B. Tech. (Electronics and Telecommunication Engineering)	Semester:	V
Course:	Drone Regulations and Applications	Code:	BTALOE28ET5T
Teaching Scheme		Evaluation Scheme	
Lecture	Tutorial	Hours	Credit
1	-	3	2
		TA	MSE-I
		MSE-II	ESE
			Total
			50

Methods of Teacher Assessment (TA): Regular Class Assignment, Attendance, Viva etc...

Course Objectives:

1. To be aware about Unmanned Aerial Vehicle.
2. To be aware about Global Drone Laws.
3. To know drone applications in Agriculture, Mapping and Surveying
4. To know drone applications in Military, Security and Logistics

After completion of the course, the students will be able to:

CO	Course Outcomes	BT Levels
CO-1	Understand UAV Fundamentals	L2
CO-2	Gain knowledge about Global Drone Laws	L2
CO-3	Deal with drone applications in Agriculture, Mapping and Surveying	L3
CO-4	Deal with drone applications in Military, Security and Logistics	L3

Unit I: Introduction to Unmanned Aerial Vehicle

(6 Hrs.)

Drone (UAV, UAS, RPAS), History & Evolution of Drones, Drones Categories (Fixed-Wing, Multi-Rotor, Hybrid, VTOL), Size and Weight, Payload Classifications. Object Detection & Tracking, Swarm Drone Intelligence.

Unit II: Drone Standards

(6 Hrs.)

DGCA Standards, Certification Requirements, Global Drone Laws (FAA, EASA, DGCA), Flight Permission and No-Fly Zones.

Unit III: Drones in Agriculture, Mapping and Surveying

(6 Hrs.)

Crop Monitoring & Mapping, Precision Spraying, Soil Analysis & Yield Prediction. Photogrammetry Basics, 3D Mapping & GIS Integration.

Unit IV: Drones in Military, Security and Logistics Applications



(6 Hrs.)

Surveillance & Reconnaissance, Border Security, Autonomous defence Systems. Last-Mile Delivery Models.

Total: 24

Reference Books:

- 1) Reg Austin: Unmanned Aircraft Systems: UAVs Design, Development and Deployment, A John Wiley and Sons, Ltd., Publication.
- 2) Paul G. Fahlstrom & Thomas J. Gleason: Introduction to UAV Systems, PubHTML5.
- 3) Sachi Nandan Mohanty: Drone Technology: Future Trends and Practical Applications.
- 4) The Drone Rules, (Government of India).


 Approved in.....
 Academic Council Meeting
 Dated:- 20/03/2025.....1



Program:	B.Tech. (Electronics and Telecommunication Engineering)			Semester:	V			
Course:	Customer Relationship Management			Code:	BTALOE29ET5T			
Teaching Scheme				Evaluation Scheme				
Lecture	Tutorial	Hours	Credit	TA	MSE-I	MSE-II	ESE	Total
2	0	2	2	10	15	15	60	100

Methods of Teacher Assessment (TA): Class test, Assignment, Case studies, Group Discussions.

Course Objectives:

1. To introduce the fundamental concepts and importance of Customer Relationship Management
2. To understand various CRM Strategies.
3. To develop analytical understanding CRM and marketing strategies.
4. To understand impact of CRM on marketing channels.

After completion of the course, the students will be able to:

CO	Course Outcomes	BT Levels
CO-1	Explain the fundamental concepts and components of CRM	L2
CO-2	Apply CRM Strategies and tools to manage customer interactions effectively	L3
CO-3	Analyze customer data and CRM processes to support managerial decisions	L4
CO-4	Evaluate CRM Technologies and propose improvements for enhancing customer relationships	L5

Unit I: Introduction to CRM

(6 Hrs.)

Overview of CRM, Components of Strategic CRM, Developing CRM Strategy, Case studies

Unit II: Implementing CRM Strategy:

(6 Hrs.)

Elements of CRM System, ROI OF CRM, CRM Implementation- Operational Projects, Analytical Projects, Deploying Operational and Analytical Outputs, Case studies

Unit III: Application of Customer value framework to marketing Decisions

(6 Hrs.)

Optimal Resource Allocation, Purchase Sequence Analysis, Linking Customer Acquisition, Relationship duration and Customer Profitability

Unit IV: Impact of CRM on marketing channels

(6 Hrs.)

Importance of Channels for CRM, Key factors and Role of Traditional channels in customer Relationship and its Major Challenges, Recent Opportunities and challenges for CRM with respect to Distribution Channels.

Total: 24

Textbooks:

- 1) V. Kumar, Werner J. Reinartz., Customer Relationship Management, Wiley student Edition

Reference Books:

- 1) Mukesh Chaturvedi, Abinav Chaturvedi Customer Relationship Management-An Indian Perspective Excel Books.

MOOC Links: NPTEL – Customer Relationship Management by Prof.Swagato Chatterjee, IIT Kharagpur