M.Tech AI in Signal Processing

Department of Electronics & Telecommunication Engineering, COEP Technological University

Why AI in Signal Processing:

- Master AI, machine learning, and advanced signal processing to solve complex problems in audio, image, biomedical, IoT, and communication domains.
- Gain practical experience through dedicated labs, research-oriented projects, and electives in edge computing, biosensors, and intelligent systems.
- High-demand roles in AI R&D, embedded AI, and data-driven signal analytics with top recruiters and startups in healthcare, automotive, and tech sectors.

Key Highlights:

- Core subjects: ML for Signals, Audio/Image Processing, NLP, AI Applications
- Electives: Blockchain in AI, Cloud & Edge Computing, Smart Biosensors
- Industry-aligned Labs & Seminars
- Research & IP Orientation
- Ethical AI & Technical Communication Training

Top Hiring Sectors & Companies

- Audio/Signal Tech: Dolby, Qualcomm, Reverie
- Vision & Imaging: Tata Elxsi, Valeo, KPIT
- AI & Healthcare: GE, Sigtuple, Philips, Persistent systems
- IoT & Edge AI: Bosch, Intel, eInfochips
- AI Security & Blockchain: IBM, Tech Mahindra, Accenture

Curriculum Structure

SEMSTER I

Sr. No.	Course Category	Course Code	Course Name
1	PSM	PSMC-01	Applied Mathematics
2	PSBC	PSBC-01	DSP Algorithms
3	PCC	PCC-01	Machine Learning for signal processing
4	PCC	PCC-02	Audio Signal Processing
5	LC	LC-01	Machine Learning for Signal Processing Lab
6	LC	LC-02	Audio signal Processing Lab
7	AEC	AEC-01	Seminar
8	PEC	PEC-01	Program Specific Elective –I
			a) Embedded System Design
			b) Signal Security
			c) Optimization techniques for Signal Processing
9	MLC	MLC-01	Research Methodology and Intellectual Property Rights
10	MLC	MLC-02	Effective Technical Communication Skills

SEMSTER II

Sr. No.	Course Category	Course Code	Course Name
1	OE	OE-01	Open Elective
			Interdisciplinary Open Course
2	PCC	PCC-03	AI for Signal Processing
3	PCC	PCC-04	Natural Language Processing
4	PCC	PCC-05	Digital Image and Video Processing
5	LC	LC-03	AI for Signal Processing Lab
6	LC	LC-04	Natural Language Processing Lab
7	LC	LC-05	Digital Image and Video Processing Lab
8	PEC	PEC-02	**Program Specific Elective –II**
			a) Computational Intelligence
			b) Cloud Computing
9	PEC	PEC-03	c) Edge Computing
			Program Specific Elective –III
			a) AI in Connected devices
			b) Smart Biosensors and Healthcare system
10	CCA	CCA-01	c) Blockchain in AI

SEMSTER III

Sr. No.	Course Category	Course Code	Course Name
1	VSEC	VSEC-01	Dissertation Phase – I
2	SLC	SLC-01	Massive Open Online Course –I

SEMSTER IV

Sr. No.	Course Category	Course Code	Course Name
1	VSEC	VSEC-02	Dissertation Phase – II
2	SLC	SLC-02	Massive Open Online Course –II

Eligibility:

BE/BTech in circuits branches with GATE score or equivalent exam conducted by COEP Tech

Industrial Collaboration:

- Collaboration with Schaeffler Technology Solutions, Tata Elxsi, TCS Research, Bosch, Philips, Intel, Jabil and research-focused startups working on AI for audio, image, video, and sensor signals
- Mentorship from AI scientists, embedded system experts, and signal processing professionals across telecom, automotive, and healthcare domains
- Internships & research projects aligned with real-world challenges in audio analytics, biomedical signals, image/video processing, and IoT signal intelligence