

M.TECH. INDUSTRIAL INTELLIGENT SYSTEMS

DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

Nowadays, the demand for intelligent systems in modern industries are growing in a fast pace. Hence it is essential to have a spectrum of engineering knowledge rather than confined one to meet the industrial challenges. In this view, the university is offering **M.Tech. Industrial Intelligent systems (IIS)** so as to impart integrated cutting-edge technology knowledge for the students. Intelligent systems are revolutionizing a variety of industries, including manufacturing, engineering, healthcare, transportation and logistics etc., M.Tech. IIS offers the next generation of solutions, powered by computing and artificial intelligence to meet the industrial challenges.

Programme Objectives:

- # To focus on Computational Intelligence, Embedded computing systems, and data interpretation for the development of industrial systems applications.

- # To provide the essential knowledge and practical experience needed to become an Intelligent Systems specialist both locally and globally.

CURRICULUM

First Semester

Course Code	Type	Course	L T P	Cr
	FC	Advanced Mathematics	3 0 0	3
	FC	Computer based Industrial Control	3 0 0	3
	FC	Advanced Control System	3 0 0	3
	SC	Data Analytics and Data Mining	2 0 2	3
	SC	Embedded System design	2 0 2	3
	SC	Modeling and Simulation Lab	0 0 3	1
	HU	Amrita Values Program*		P/F
	HU	Career Competency I*		P/F
				16

* Non-Credit Course

Second Semester

Course Code	Type	Course	L T P	Cr
	FC	Architecture of Intelligent Systems	3 0 0	3
	SC	Computational Intelligence	2 0 2	3
	SC	Fault Diagnostic Systems	3 0 2	4
	E	Elective - I	3 0 0	3
	E	Elective - II	3 0 0	3
	SC	Industrial Electronics Laboratory	0 0 3	1
	SC	Research Methodology	2 0 0	2
	HU	Career Competency II	0 0 2	1
				20

Third Semester

Course Code	Type	Course	L T P	Cr
	E	Elective – III*	3 0 0	3
	E	Elective – IV*	3 0 0	3
	P	Dissertation		8
				14

*Elective-III and Elective-IV can be MOOC courses.

Fourth Semester

Course Code	Type	Course	L T P	Cr
	P	Dissertation		12

Total: 62

List of Courses

Foundation Core

Course Code	Course	L T P	Cr
	Advanced Mathematics	3 0 0	3
	Computer based Industrial Control	3 0 0	3
	Advanced Control System	3 0 0	3
	Architecture of Intelligent Systems	3 0 0	3
	Total		12

Subject Core

Course Code	Course	L T P	Cr
	Data Analytics and Data mining	2 0 1	3
	Embedded System design	2 0 1	3
	Modeling and Simulation Lab	0 0 1	1
	Computational Intelligence	2 0 1	3
	Fault Detection and Diagnosis	3 0 1	4
	Industrial Electronics Laboratory	0 0 1	1
	Research Methodology	2 0 0	2
	Total		17

Electives

Course Code	Course	L T P	Cr
	Industrial IoT	3 0 0	3
	Real time Operating Systems	3 0 0	3
	Transducer Design	3 0 0	3
	Electronic data converters	3 0 0	3
	Hardware Software Co-design	3 0 0	3
	Reconfigurable Computing	3 0 0	3
	Industrial Robotics	3 0 0	3
	Human Machine Interface	3 0 0	3
	Communication systems for industrial networking	3 0 0	3
	AI for Smart Grids	3 0 0	3
	Cyber Security For Industrial Systems	3 0 0	3
	Deep Learning	3 0 0	3
	Operations Research	3 0 0	3

Project Work

Course Code	Course	L T P	Cr
	Dissertation		8
	Dissertation		12