M.Tech. (AI) – Curriculum

The curriculum of the two-year M.Tech. (AI) program comprises a total of 64 credits of which 43 credits account for course work and 21 credits for project work. The course work is organized into:

- Pool A Courses (19 Credits) (Hardcore)
- Pool B Courses (Minimum 12 Credits) (Softcore)
- Recommended Electives (up to 12 Credits)

**Pool A Courses: 19 credits**

- E0 251 3:1 Data Structures and Algorithms
- **E1 222** 3:0 Stochastic Models and Applications **OR** E2 202 Random Processes

- E1 2XX 3:1 Computational Linear Algebra
- E0 230 3:1 Computational Methods of Optimization
- **E1 213** 3:1 Pattern Recognition and Neural Networks **OR** E0270 3:1 Machine Learning

**Pool B Courses: (Minimum of 12 Credits)**

- E1 277 3:1 Reinforcement Learning
- E1 216 3:1 Computer Vision
- **E9 241** 2:1 Digital Image Processing
- **E9 261** 3:1 Speech Information Processing
- E1 254 3:1 Game Theory
- **E1 241** 3:0 Dynamics of Linear Systems
- E0 259 3:1 Data Analytics
- E2 231 3:0 Topics in Statistical Methods
- E9 206 3:0 Digital Video: Perception and Algorithms
Project : 21 Credits
E1 299  0:21  Dissertation Project

Recommended Electives: Upto 12 Credits
(In addition to the courses listed below, Pool B courses can also be taken as recommended electives. Courses not listed here can be taken as well with the approval of the faculty advisor).

- E0 265  3:1  Convex Optimization and Applications
- E0 334  3:1  Deep Learning for Natural Language Processing
- E0 268  3:1  Practical Data Science
- DS 256  3:1  Scalable Systems for Data Science
- E9 205  3:1  Machine Learning for Signal Processing
- DS 222  3:1  Machine Learning with Large Data sets
- DS 265  3:1  Deep Learning for Computer Vision
- E0 306  3:1  Deep Learning: Theory and Practice
- E0 249  3:1  Approximation Algorithms
- E0 235  3:1  Cryptography
- E0 238  3:1  Intelligent Agents
- E2 201  3:0  Information Theory
- E1 245  3:0  Online Prediction and Learning
- E2 336  3:0  Foundations of Machine Learning
- E2 207  3:0  Concentration Inequalities
- E1 244  3:0  Detection and Estimation Theory
- E1 396  3:0  Topics in Stochastic Approximation Algorithms
- E2 230  3:0  Network Science and Modelling
- E1 246  3:1  Natural Language Understanding
- E9 253  3:0  Neural Networks and Learning Systems