ANNAMACHARYA INSTITUTE OF TECHNOLOGY AND SCIENCES: KADAPA
(AUTONOMOUS)

UTUKUR (P), C. K. DINNE (V&M),KADAPA,YSR DIST.

(Approved by AICTE, New Delhi & Affiliated to JNTUA, Anantapuramu)
Accredited by NAAC with 'A' grade & NBA

SEMSTER - III

S.No.	Course codes	Course Name	Category	Hours per week			Credits
				L	T	P	
1.	23HPE5813 23HPE5814 23HPE5815	**Program Elective Course – V** Software Defined NetworksReinforcement Learning Data Analytics	PE	3	0	0	3
2.	23H0E0301 23H0E1E01 23H0E1E02	**Open Elective** Industrial Safety Business Analytics Optimization Techniques	OE	3	0	0	3
3.	23HPR5801	Dissertation Phase – I	PR	0	0	20	10
4.	23HCA5801	Co-curricular Activities					2
		Total					**18**

SEMESTER - IV

S.No.	Course codes	Course Name	Category	Hours per			Credits
				L	T	P	
1.	23HPR5802	Dissertation Phase – II	PR	0	0	32	16
Total							**16**

ANNAMACHARYA INSTITUTE OF TECHNOLOGY AND SCIENCES: KADAPA
(AUTONOMOUS)

UTUKUR (P), C. K. DINNE (V&M),KADAPA,YSR DIST.
(Approved by AICTE, New Delhi & Affiliated to JNTUA, Anantapuramu)
Accredited by NAAC with 'A' grade & NBA

II- M.Tech - III - SEMSTER

CSE SUBJECTS

S.No.	Course Name
1.	**Program Elective Course – V** Software Defined Networks Reinforcement Learning Data Analytics
2.	Dissertation Phase – I
3.	Co-curricular Activities

Signatures

Chairman (HOD of CSE)
(Dr. C.VENKATA SUBBAIAH)

Academic council
(Dr. T.RAMAKRISHNUDU)

Academic council
(Dr. K.P.SUPREETHI)

University nominee
(Dr. K.MADHAVI)

Internal member
(Mrs. K.MUNNI)

Internal member
(Mrs. J.SANDHYA RANI)

ANNAMACHARYA INSTITUTE OF TECHNOLOGY AND SCIENCES: KADAPA
(AUTONOMOUS)
UTUKUR (P), C. K. DINNE (V&M),KADAPA,YSR DIST.
(Approved by AICTE, New Delhi & Affiliated to JNTUA, Anantapuramu)
Accredited by NAAC with 'A' grade & NBA

M.TECH. IN COMPUTER SCIENCE AND ENGINEERING
COURSE STRUCTURE & SYLLABUS

Course Code	SOFTWARE DEFINED NETWORKS	L	T	P	C
23HPE5813		3	0	0	3
	Semester	III			

Course Objectives:

- This course introduces about software defined networking, an emerging paradigm in computer networking that allows a logically centralized software program to control the behavior of an entirenetwork.

Course Outcomes (CO): Student will be able to

- Differentiate between traditional networks and software defined networks and understand the keybenefits and use cases of SDN.
- Interpret the SDN data plane devices and OpenFlow Protocols
- Implement the operation of SDN control plane with different controllers
- Apply techniques that enable applications to control the underlying network using SDN
- Evaluate Network Functions Virtualization components and their roles in SDN

UNIT - I	Lecture Hrs:

Evolving network requirements-The SDN Approach: Requirements, SDN Architecture, Characteristics ofSoftware-Defined Networking, SDN and NFV-Related Standards: Standards-Developing Organizations, Industry Consortia, Open Development Initiatives.

UNIT - II	Lecture Hrs:

SDN data plane: Data plane Functions, Data plane protocols, Open flow logical network Device: Flow tableStructure, Flow Table Pipeline, The Use of Multiple Tables, Group Table- Open Flow Protocol.

UNIT - III	Lecture Hrs:

SDN Control Plane Architecture: Control Plane Functions, Southbound Interface, Northbound Interface,
Routing, ITU-T Model- OpenDaylight-REST- Cooperation and Coordination Among Controllers

UNIT - IV	Lecture Hrs:

SDN Application Plane Architecture: Northbound Interface, Network Applications, User Interface-Network Services Abstraction Layer: Abstractions in SDN, Frenetic- Traffic Engineering Measurement and MonitoringSecurity- Data CentreNetworking- Mobility and Wireless.

UNIT - V	Lecture Hrs:

Background and Motivation for NFV- Virtual Machines- NFV Concepts: Simple Example of the Use of NFV, NFV Principles, High-Level NFV Framework, NFV Benefits and Requirements- NFV Reference Architecture:
NFV Management and Orchestration

ANNAMACHARYA INSTITUTE OF TECHNOLOGY AND SCIENCES: KADAPA
(AUTONOMOUS)
UTUKUR (P), C. K. DINNE (V&M),KADAPA,YSR DIST.
(Approved by AICTE, New Delhi & Affiliated to JNTUA, Anantapuramu)
Accredited by NAAC with 'A' grade & NBA

Textbooks:
1. Paul Goransson Chuck Black Timothy Culver: Software Defined Networks: A Comprehensive Approach, Morgan Kaufmann, 2016. 2. Ken Gray Thomas Nadeau: Network Function Virtualization, Morgan Kaufmann, 2016.
Reference Books:
1. Larry Peterson , Carmelo Cascone , Bruce Davie: Software-Defined Networks: A Systems Approach,Systems Approach, 2021

Signatures

Chairman (HOD of CSE)
(Dr. C.VENKATA SUBBAIAH)

Academic council
(Dr. T.RAMAKRISHNUDU)

Academic council
(Dr. K.P.SUPREETHI)

University nominee
(Dr. K.MADHAVI)

Internal member
(Mrs. K.MUNNI)

Internal member
(Mrs. J.SANDHYA RANI)

ANNAMACHARYA INSTITUTE OF TECHNOLOGY AND SCIENCES: KADAPA
(AUTONOMOUS)
UTUKUR (P), C. K. DINNE (V&M),KADAPA,YSR DIST.
(Approved by AICTE, New Delhi & Affiliated to JNTUA, Anantapuramu)
Accredited by NAAC with 'A' grade & NBA

Course Code	REINFORCEMENT LEARNING	L	T	P	C
23HPE5814	(Common for MTech CSE, AI & ML)	3	0	0	3
	Semester				III

Course Objectives:

- Reinforcement Learning is a subfield of Machine Learning, but is also a general-purpose formalism for automated decision-making and AI. This course introduces you to statistical learning techniques wherean agent explicitly takes actions and interacts with the world.

Course Outcomes (CO): Student will be able to

- Formulate Reinforcement Learning problems
- Apply various Tabular Solution Methods to Markov Reward Process Problems
- Apply various Iterative Solution methods to Markov Decision Process Problems
- Comprehend Function approximation methods

UNIT - I — Lecture Hrs:

Introduction: Introduction to Reinforcement Learning (RL) – Difference between RL and Supervised Learning,RL and Unsupervised Learning. Elements of RL, Markov property, Markov chains, Markov reward process (MRP).

UNIT - II — Lecture Hrs:

Evaluative Feedback - Multi-Arm Bandit Problem: An n-Armed Bandit Problem, Exploration vs Exploitation principles, Action value methods, Incremental Implementation, tracking a non-stationary problem, optimistic initial values, upper-confidence-bound action selection, Gradient Bandits. Introduction to and proof of Bellmanequations for MRPs

UNIT - III — Lecture Hrs:

Introduction to Markov decision process (MDP), state and action value functions, Bellman expectationequations, optimality of value functions and policies, Bellman optimality equations. Dynamic Programming
(DP): Overview of dynamic programming for MDP, principle of optimality, Policy Evaluation, PolicyImprovement, policy iteration, value iteration, asynchronous DP , Generalized Policy Iteration.

UNIT - IV — Lecture Hrs:

Monte Carlo Methods for Prediction and Control: Overview of Monte Carlo methods for model free RL, Monte Carlo Prediction, Monte Carlo estimation of action values, Monto Carlo Control, On policy and off policy learning, Importance sampling. Temporal Difference Methods: TD Prediction, Optimality of TD(0), TD
Control methods - SARSA, Q-Learning and their variants.

UNIT - V — Lecture Hrs:

Eligibility traces: n-Step TD Prediction, Forward and Backward view of TD(λ), Equivalence of forward and backward view, Sarsa(λ),, Watkins's Q(λ), Off policy eligibility traces using importance of sampling. Function Approximation Methods: Value prediction with function approximation, gradient descent methods, Linear methods, control with function approximation.

ANNAMACHARYA INSTITUTE OF TECHNOLOGY AND SCIENCES: KADAPA
(AUTONOMOUS)

UTUKUR (P), C. K. DINNE (V&M),KADAPA,YSR DIST.
(Approved by AICTE, New Delhi & Affiliated to JNTUA, Anantapuramu)
Accredited by NAAC with 'A' grade & NBA

Textbooks:
1. Richard S. Sutton and Andrew G. Barto, Reinforcement Learning: An Introduction", 2nd Edition, TheMIT Press. 2. CsabaSzepesvari – Algorithms for Reinforcement Learning – Morgan & Claypool, 2010.
Reference Books:
1. Reinforcement Learning By Richard S. (University Of Alberta) Sutton,Andrew G. (Co-DirectorAutonomous Learning Laboratory) Barto

Signatures

Chairman (HOD of CSE)
(Dr. C.VENKATA SUBBAIAH)

Academic council
(Dr. T.RAMAKRISHNUDU)

Academic council
(Dr. K.P.SUPREETHI)

University nominee
(Dr. K.MADHAVI)

Internal member
(Mrs. K.MUNNI)

Internal member
(Mrs. J.SANDHYA RANI)

ANNAMACHARYA INSTITUTE OF TECHNOLOGY AND SCIENCES: KADAPA
(AUTONOMOUS)

UTUKUR (P), C. K. DINNE (V&M),KADAPA,YSR DIST.
(Approved by AICTE, New Delhi & Affiliated to JNTUA, Anantapuramu)
Accredited by NAAC with 'A' grade & NBA

Course Code	DATA ANALYTICS	L	T	P	C
23HPE5815	(Common to M.Tech CSE, SE)	3	0	0	3
	Semester	III			

Course Objectives:

- To explore the fundamental concepts of data analytics.
- To learn the principles and methods of statistical analysis
- Discover interesting patterns, analyze supervised and unsupervised models and estimate theaccuracy of the algorithms.
- To understand the various search methods and visualization techniques.
-

Course Outcomes (CO): Student will be able to

- Understand the ideas of statistical approaches to learning
- Understand the significance of exploratory data analysis (EDA) in data science and apply basic tools(plots, graphs, summary statistics) to perform EDA
- Apply basic machine learning algorithms (Linear Regression, k-Nearest Neighbors (k-NN), k-means,Naive Bayes) for predictive modeling. Explore the merits of Naive Bayes technique
- Recognize the characteristics of machine learning techniques that are useful to solve real-world problems
-

UNIT - I	Lecture Hrs:

Introduction: What is Data Science? Big Data and Data Science hype and getting past the hype, Why now?,Datafication, Current landscape of perspectives, Skill sets, Life cycle of Data Science, Different phases.

UNIT - II	Lecture Hrs:

Exploratory Data Analysis and the Data Science Process: Basic tools (plots, graphs and summary statistics) ofEDA, Philosophy of EDA, The Data Science Process, Case Study: RealDirect (online real estate firm), Three
Basic Machine Learning Algorithms: Linear Regression, k-Nearest Neighbours (k-NN), k-means.

UNIT - III	Lecture Hrs:

One More Machine Learning Algorithm and Usage in Applications: Motivating application: Filtering Spam, Why Linear Regression and k-NN are poor choices for Filtering Spam, Naive Bayes and why it works for Filtering Spam, Data Wrangling: APIs and other tools for scrapping the Web, Feature Generation and Feature Selection (Extracting Meaning From Data), Motivating application: user (customer) retention,

UNIT - IV	Lecture Hrs:

Feature Generation (brainstorming, role of domain expertise, and place for imagination), Feature Selection algorithms: Filters; Wrappers; Decision Trees; Random Forests, Recommendation Systems: Building a User- Facing Data Product: Algorithmic ingredients of a Recommendation Engine, Dimensionality Reduction, Singular Value Decomposition, Principal Component Analysis, Exercise: build your own recommendation system

ANNAMACHARYA INSTITUTE OF TECHNOLOGY AND SCIENCES: KADAPA
(AUTONOMOUS)
UTUKUR (P), C. K. DINNE (V&M),KADAPA,YSR DIST.
(Approved by AICTE, New Delhi & Affiliated to JNTUA, Anantapuramu)
Accredited by NAAC with 'A' grade & NBA

UNIT - V		Lecture Hrs:
Data Visualization: Basic principles, ideas and tools for data visualization, Case study on industry projects, Exercise: create your own visualization of a complex dataset, Data Science and Ethical Issues: Discussions onprivacy, security, ethics, A look back at Data Science, Next-generation data scientists.		
Textbooks:		
1. Cathy O'Neil and Rachel Schutt. Doing Data Science, Straight Talk From The Frontline. O'Reilly,2014. 2. Jure Leskovek, AnandRajaraman and Jerey Ullman. Mining of Massive Datasets, Cambridge University Press, 2014.		
Reference Books:		
1. Kevin P. Murphy. Machine Learning: A Probabilistic Perspective. MIT Press, 2013. 2. Foster Provost and Tom Fawcett. Data Science for Business: What You Need to Know about DataMining and Data-analytic Thinking. O'Reilly, 2013. 3. Trevor Hastie, Robert Tibshirani and Jerome Friedman. Elements of Statistical Learning, SecondEdition. Springer, 2009. 4. Avrim Blum, John Hopcroft and RavindranKannan. Foundations of Data Science.2018. 5. Mohammed J. Zaki and Wagner Miera Jr. Data Mining and Analysis: Fundamental Concepts andAlgorithms. Cambridge University Press, 2014. 6. Jiawei Han, MichelineKamber and Jian Pei. Data Mining: Concepts and Techniques, Third Edition. Morgan Kaufmann, 2011.		

Signatures

Chairman (HOD of CSE)
(Dr. C.VENKATA SUBBAIAH)

Academic council
(Dr. T.RAMAKRISHNUDU)

Academic council
(Dr. K.P.SUPREETHI)

University nominee
(Dr. K.MADHAVI)

Internal member
(Mrs. K.MUNNI)

Internal member
(Mrs. J.SANDHYA RANI)

ANNAMACHARYA INSTITUTE OF TECHNOLOGY AND SCIENCES: KADAPA (AUTONOMOUS)

(Approved by AICTE, New Delhi & Affiliated to JNTUA, Anantapuramu)
Accredited by NAAC with 'A' grade & NBA

M.TECH. IN COMPUTER SCIENCE AND ENGINEERING

COURSE STRUCTURE & SYLLABUS

Course Code	INDUSTRIAL SAFETY	L	T	P	C
23H0E0301	(Common to M.Tech CSE, CN, SE,AI & ML)	3	0	0	3
	Semester	III			

Course Objectives:

- To know about Industrial safety programs and toxicology, Industrial laws , regulations and sourcemodels
- To understand about fire and explosion, preventive methods, relief and its sizing methods
- To analyse industrial hazards and its risk assessment.
-

Course Outcomes (CO): Student will be able to

- To list out important legislations related to health, Safety and Environment.
- To list out requirements mentioned in factories act for the prevention of accidents.
- To understand the health and welfare provisions given in factories act.
-

UNIT - I — Lecture Hrs:

Industrial safety: Accident, causes, types, results and control, mechanical and electrical hazards, types, causes and preventive steps/procedure, describe salient points of factories act 1948 for health and safety, wash rooms, drinking water layouts, light, cleanliness, fire, guarding, pressure vessels, etc, Safety color codes. Fire prevention and firefighting, equipment and methods.

UNIT - II — Lecture Hrs:

Fundamentals of maintenance engineering: Definition and aim of maintenance engineering, Primary and secondary functions and responsibility of maintenance department, Types of maintenance, Types and applications of tools used for maintenance, Maintenance cost & its relation with replacement economy, Service life of equipment.

UNIT - III — Lecture Hrs:

Wear and Corrosion and their prevention: Wear- types, causes, effects, wear reduction methods, lubricants- types and applications, Lubrication methods, general sketch, working andapplications, i. Screw down grease cup, ii. Pressure grease gun, iii. Splash lubrication, iv. Gravity lubrication, v. Wick feed lubrication vi. Side
feed lubrication, vii. Ring lubrication, Definition, principle and factors affecting the corrosion. Types of corrosion, corrosion prevention methods.

UNIT - IV — Lecture Hrs:

Fault tracing: Fault tracing-concept and importance, decision treeconcept, need and applications, sequence of fault finding activities, show as decision tree, draw decision tree for problems in machine tools, hydraulic, pneumatic, automotive, thermal and electrical equipment's like, I. Any one machine tool, ii. Pump iii. Air compressor, iv. Internal combustion engine, v. Boiler, vi. Electrical motors, Types of faults in machine tools
and their general causes.

UNIT - V — Lecture Hrs:

Periodic and preventive maintenance: Periodic inspection-concept and need, degreasing, cleaning and repairing schemes, overhauling of mechanical components, overhauling of electrical motor, common troubles and remedies of electric motor, repair complexities and its use, definition, need, steps and advantages of preventivemaintenance. Steps/procedure for periodic and preventive maintenance of:

I. Machine tools, ii. Pumps, iii. Air compressors, iv. Diesel generating (DG) sets, Program and schedule of preventive maintenance of mechanical and electrical equipment, advantages of preventive maintenance. Repair cycle concept and importance
Textbooks:
1. Maintenance Engineering Handbook, Higgins & Morrow, Da Information Services. 2. Maintenance Engineering, H. P. Garg, S. Chand and Company.
Reference Books:
1. Pump-hydraulic Compressors, Audels, Mcgrew Hill Publication. 2. Foundation Engineering Handbook, Winterkorn, Hans, Chapman & Hall London.

Signatures

Chairman (HOD of MBA) (Dr. G.RAMANJANEYULU)	Academic council (Prof. T. SRINIVAS)	Academic council (Prof. P. MURALI KRISHNA)
University nominee (Dr. S. VENKATA RAMANAIAH)	Internal member (Dr. S.MOHANA)	Internal member (Mrs. S.SABITHA)

ANNAMACHARYA INSTITUTE OF TECHNOLOGY AND SCIENCES: KADAPA (AUTONOMOUS)

(Approved by AICTE, New Delhi & Affiliated to JNTUA, Anantapuramu)
Accredited by NAAC with 'A' grade & NBA

Course Code	BUSINESS ANALYTICS (Common to M.Tech CSE, CN, SE,AI & ML)	L	T	P	C
23H0E1E01		3	0	0	3
	Semester	III			

Course Objectives:

- The main objective of this course is to give the student a comprehensive understanding of business analytics methods.

Course Outcomes (CO): Student will be able to

- Students will demonstrate knowledge of data analytics.
- Students will demonstrate the ability of think critically in making decisions based ondata and deep analytics.
- Students will demonstrate the ability to use technical skills in predicative andprescriptive modeling to support business decision-making.
- Students will demonstrate the ability to translate data into clear, actionable insights.

UNIT - I	Lecture Hrs:

Business Analysis: Overview of Business Analysis, Overview of Requirements, Role of the Business Analyst.Stakeholders: the project team, management, and the front line, Handling Stakeholder Conflicts.

UNIT - II	Lecture Hrs:

Life Cycles: Systems Development Life Cycles, Project Life Cycles, Product Life Cycles, Requirement LifeCycles.

UNIT - III	Lecture Hrs:

Forming Requirements: Overview of Requirements, Attributes of Good Requirements, Types of Requirements, Requirement Sources, Gathering Requirements from Stakeholders, Common Requirements Documents. Transforming Requirements: Stakeholder Needs Analysis, Decomposition Analysis, Additive/Subtractive
Analysis, Gap Analysis, Notations (UML & BPMN), Flowcharts, Swim Lane Flowcharts, Entity-Relationship Diagrams, State-Transition Diagrams, Data Flow Diagrams, Use Case Modeling, Business Process Modeling

UNIT - IV	Lecture Hrs:

Finalizing Requirements: Presenting Requirements, Socializing Requirements and Gaining Acceptance,Prioritizing Requirements. Managing Requirements Assets: Change Control, Requirements Tools

UNIT - V	Lecture Hrs:

Recent Trands in: Embedded and colleborative business intelligence, Visual data recovery, Data Storytelling and Data Journalism.

Textbooks:

1. Business Analysis by James Cadle et al.
2. Project Management: The Managerial Process by Erik Larson and, Clifford Gray

ANNAMACHARYA INSTITUTE OF TECHNOLOGY AND SCIENCES: KADAPA (AUTONOMOUS)

(Approved by AICTE, New Delhi & Affiliated to JNTUA, Anantapuramu)
Accredited by NAAC with 'A' grade & NBA

Reference Books:

1. Business analytics Principles, Concepts, and Applications by Marc J. Schniederjans, Dara G.Schniederjans, Christopher M. Starkey, Pearson FT Press.
2. Business Analytics by James Evans, persons Education.

Signatures

Chairman (HOD of MBA) (Dr. G.RAMANJANEYULU)	Academic council (Prof. T. SRINIVAS)	Academic council (Prof. P. MURALI KRISHNA)
University nominee (Dr. S. VENKATA RAMANAIAH)	Internal member (Dr. S.MOHANA)	Internal member (Mrs. S.SABITHA)

ANNAMACHARYA INSTITUTE OF TECHNOLOGY AND SCIENCES: KADAPA
(AUTONOMOUS)

(Approved by AICTE, New Delhi & Affiliated to JNTUA, Anantapuramu)
Accredited by NAAC with 'A' grade & NBA

M.TECH. IN COMPUTER SCIENCE AND ENGINEERING
COURSE STRUCTURE & SYLLABUS

Course Code	OPTIMIZATION TECHNIQUES	L	T	P	C
23H0E1E02	(Common to M.Tech CSE, CN, SE,AI & ML)	3	0	0	3
	Semester	III			

Course Objectives:

- Enumerate the fundamental knowledge of Linear Programming and Dynamic Programming problems.
- Learn classical optimization techniques and numerical methods of optimization.
- Know the basics of different evolutionary algorithms.
- Explain Integer programming techniques and apply different optimizationtechniques to solve various models arising from engineering areas.

Course Outcomes (CO): Student will be able to

- Explain the fundamental knowledge of Linear Programming and DynamicProgramming problems.
- Use classical optimization techniques and numerical methods of optimization.
- Describe the basics of different evolutionary algorithms.
- Enumerate fundamentals of Integer programming technique and apply different techniques to solve various optimization problems arising from engineering areas

UNIT - I — Lecture Hrs:

LINER PROGRAMMING (L.P):
Revised Simplex Method, Duel simplex Method, Sensitivity Analysis
DYNAMIC PROGRAMMING (D.P):
Multistage decision processes. Concepts of sub optimization, Recursive Relation-calculus method, tabularmethod, LP as a case of D.P.

UNIT - II — Lecture Hrs:

CLASSICAL OPTIMIZATION TECHNIQUES:
Single variable optimization without constraints, Multi variable optimization without constraints, multivariableoptimization with constraints – method of Lagrange multipliers, Kuhn-Tucker conditions.
NUMERICAL METHODS FOR OPTIMIZATION:
Nelder Mead's Simplex search method, Gradient of a function, Steepest descent method, Newton's method

UNIT - III — Lecture Hrs:

MODERN METHODS OF OPTIMIZATION:
GENETIC ALGORITHM (GA):
Differences and similarities between conventional and evolutionary algorithms, working principle, GeneticOperators- reproduction, crossover, mutation
GENETIC PROGRAMMING (GP):
Principles of genetic programming, terminal sets, functional sets, differences between GA &GP, Randompopulation generation. Fuzzy Systems: Fuzzy set Theory, Optimization of Fuzzy systems.

ANNAMACHARYA INSTITUTE OF TECHNOLOGY AND SCIENCES: KADAPA
(AUTONOMOUS)
(Approved by AICTE, New Delhi & Affiliated to JNTUA, Anantapuramu)
Accredited by NAAC with 'A' grade & NBA

M.TECH. IN COMPUTER SCIENCE AND ENGINEERING

UNIT - IV		Lecture Hrs:
INTEGER PROGRAMMING: Graphical Representation, Gomory's Cutting Plane Method,Balas' Algorithm for Zero–One Programming,Branch-and-Bound Method		
UNIT - V		Lecture Hrs:
APPLICATIONS OF OPTIMIZATION IN DESIGN AND MANUFACTURING SYSTEMS: Formulation of model- optimization of path synthesis of a four-bar mechanism, minimization of weight of a cantilever beam, general optimization model of a machining process, optimization of arc welding parameters, and general procedure in optimizing machining operations sequence.		
Textbooks:		
1. Engineering Optimization (4th Edition) by S.S.Rao, New Age International,		
Reference Books:		
1. Optimization for Engineering Design by Kalyanmoy Deb, PHI Publishers 2. Genetic algorithms in Search, Optimization, and Machine learning – D.E.Goldberg,Addison-Wesley Publishers 3. Operations Research by Hillar and Liberman, TMH Publishers 4. Optimal design – JasbirArora, McGraw Hill (International) Publisher		

Signatures

Chairman (HOD of MBA)
(Dr. G.RAMANJANEYULU)

Academic council
(Prof. T. SRINIVAS)

Academic council
(Prof. P. MURALI KRISHNA)

University nominee
(Dr. S. VENKATA RAMANAIAH)

Internal member
(Dr. S.MOHANA)

Internal member
(Mrs. S.SABITHA)

ANNAMACHARYA INSTITUTE OF TECHNOLOGY AND SCIENCES: KADAPA
(AUTONOMOUS)

UTUKUR (P), C. K. DINNE (V&M),KADAPA,YSR DIST.
(Approved by AICTE, New Delhi & Affiliated to JNTUA, Anantapuramu)
Accredited by NAAC with 'A' grade & NBA

SEMESTER - IV

S.No.	Course codes	Course Name
1.	23HPR5802	Dissertation Phase – II

Signatures

Chairman (HOD of CSE)
(Dr. C.VENKATA SUBBAIAH)

Academic council
(Dr. T.RAMAKRISHNUDU)

Academic council
(Dr. K.P.SUPREETHI)

University nominee
(Dr. K.MADHAVI)

Internal member
(Mrs. K.MUNNI)

Internal member
(Mrs. J.SANDHYA RANI)