

An ISO 9001:2015 Certified Institute, Approved by AICTE, Affiliated to JNTU Kakinada, AP Phone: 0866-2844444, Email: wijayatechfw@gmail.com Website: www.vitw.edu.in College Code: NP, Enikepadu, Vijayawada-521108

Department Of Information Technology

List of Course Outcomes

Batch: 2016(R16)

Year &	Subject	Course	Course Name	At The End of The Course, The Student Will
Sem	Code	Code		Be Able To
				CO1: The lesson motivates the readers to develop their knowledge different fields and serve the society accordingly. CO2: The lesson motivates the public to adopt road safety measures. CO3: The lesson creates an awareness in the readers that mass production is ultimately
I-I	R161101	C1101	English - I	detrimental to biological survival
				CO4: The lesson helps to choose a source of energy suitable for rural India.
				CO5: The lesson creates an awareness in the reader as to the usefulness of animals for the human society.
				CO6: The lesson helps in identifying safety measures against different varieties of accidents at home and in the workplace.
I-I	R161102	C1102	Mathematics - I	CO1: Solve linear differential equations of first order and first degree and their applications CO2: Solve linear differential equations of second and higher order and their applications to various engineering fields. CO3: Determine Laplace transform and inverse Laplace transform of various functions. Apply the Laplace transforms for Solving Linear Differential Equations CO4: Calculate total derivative, Jocobian and minima of functions of two variables CO5: Formation of Partial differential Equations and solution of first order linear and non-linear
				equations. CO6: Solve Linear Partial differential Equations of higher order and classification of second order Partial differential Equations.
				CO1: Calculate a root of algebraic and transcendental equations.
				CO2: Explain relation between the finite difference operators. compute interpolating polynomial for the given data.



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т т	D161100	C1102	Mathematics – II	CO3: Solve ordinary differential equations
I-I	R161109	C1103	(Mathematical	numerically using Euler's and RK method.
			Methods)	CO4: Find Fourier series for certain functions.
				CO5: Identify/classify and solve the different
				types of partial differential equations.
				CO6: Find Fourier transforms for certain
				functions.
				CO1: Impart the knowledge of the concept of coherence and superposition and apply the knowledge to understand the utility of interference in our daily life. CO2: Analyse the intensity variation of light due to diffraction and apply the knowledge to understand the working of optical
				\mathcal{E}
				instrumentation with high resolution.
				CO3: Impart the knowledge of the physical
				optics phenomena like polarisation. Analyse the
I-I	R161104	C1104	Applied Physics	concept of population inversion and different
1-1	K101104	C110 4	Applied Fllysics	types of emission. Comprehend the role of
				LASERS in the scenario of human development.
				CO4: Study the theoretical concepts underlying
				the EM fields and comprehend its role in the
				advancement of science and technology.
				CO5: Conceive the concepts related to quantum
				mechanics and apply the knowledge to different
				problems. Provide a clear understanding about
				the different electron theories and their defects.
				CO6: Discern the classification of crystalline
				solids and comprehend the relevance of
				Einstein's equations in the drift and diffusion
				mechanisms in the conduction of
				semiconductors, Hall effect and its applications.
				CO1: Understand the basic terminology used in
				computer programming
				CO2: Write, compile and debug programs in C
			Committee	language.
I-I	R161107	C1105	Computer	CO3: Use different data types in a computer
1-1	K10110/	C1103	Programming	program CO4 Decision and involving decision.
				CO4: Design programs involving decision
				structures, loops and functions.
				CO5: Explain the difference between call by
				value and call by reference
				CO6: Understand the dynamics of memory by
				the use of pointers.
				CO1: Construct the polygons, curves and
				various types of scales.



I-I	R161112	C1106	Engineering Drawing	CO2: Project the points and lines parallel to one other. CO3: Draw the projections of the lines inclined to both of the planes. CO4: Draw the projections of the line. CO5: Draw the projections of the various types
				of solids in different positions. CO6: Represent and convert the isometric view to orthography view.
I-II	R161201	C1201	English – II	CO1: The lesson underscores that the ultimate aim of Education is to enhance wisdom. CO2: The lesson enables the students to promote peaceful co-existence and universal harmony among people and society. CO3: The lesson imparts the students to manage different cultural shocks due to globalization. CO4: The theme projects society's need to reexamine its traditions when they are outdated. CO5: The lesson offers several inputs to protect environment for the sustainability of the future generations. CO6: Pupil get inspired by eminent personalities who toiled for the present-day advancement of software development.
I-II	R161203	C1202	Mathematics - III	CO1: Find rank and solve simultaneous linear equations numerically using various matrix methods CO2: Determine Eigen values and Eigen vectors of a given matrix and solve Simultaneous linear equations. CO3: Determine double integral over a region and triple integral over a volume. CO4: Evaluation of Integrals by using special functions. CO5: Calculate gradient of a scalar function, divergence and curl of a vector function. CO6: Determine line, surface and volume integrals. Apply Green, Stokes and Gauss divergence theorems to calculate line, surface and volume integrals
				CO1: The advantages and limitations of plastic materials and their use in design would be understood. CO2: Fuels which are used commonly and their economics, advantages and limitations are discussed.



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I-II	R161211	C1203	Applied Chemistry	CO3: Reasons for corrosion and some methods of corrosion control would be understood. CO4: The students would be now aware of materials like nano-materials and fullerenes and their uses. Similarly liquid crystals and superconductors are understood. CO5: The importance of green synthesis is well understood and how they are different from conventional methods is also explained. CO6: Conductance phenomenon is better understood. The students are exposed to some of the alternative fuels and their advantages and limitations.
I-II	R161215	C1204	Object Oriented Programming through C++	CO1: Understand the basic terminology used in computer programming CO2: Design classes, objects and constructors CO3: Basic concepts of operator overloading, inheritance CO4: Design applications of polymorphism and virtual functions CO5: Design applications of generic programming with templates. CO6: Overview of standard templates programming.
I-II	R161212	C1205	Environmental Studies	CO1: The natural resources and their importance for the sustenance of the life and recognize the need to conserve the natural resources CO2: The concepts of the ecosystem and its function in the environment. The need for protecting the producers and consumers in various ecosystems and their role in the food web CO3: The biodiversity of India and the threats to biodiversity, and conservation practices to protect the biodiversity CO4: Various attributes of the pollution and their impacts and measures to reduce or control the pollution along with waste management practices CO5: Social issues both rural and urban environment and the possible means to combat the Challenges CO6: The environmental legislations of India and the first global initiatives towards sustainable development.



				CO1: Calculate the resultant of various force
				systems.
				CO2: The conditions of static equilibrium to
				various force systems.
				CO3: Calculate the centroid of composite figures
			Engineering	and centre of gravity of composite bodies
I-II	R161216	C1206	Mechanics	CO4: Calculate area moment of inertia of
				composite figures and mass moment of inertia of
				composite bodies.
				CO5: Calculate velocity, acceleration in
				rectilinear, curve linear motions of rigid body
				CO6: Calculate work energy, impulse
				momentum in translation.
				CO1: List motivation for learning a
				programming language
				CO2: Access online resources for R and import
				new function packages into the R workspace.
				CO3: Import, review, manipulate and summarize
			Statistics with R	data-sets in R
II-I	R1621051	C2101	Programming	CO4: Explore data-sets to create testable
				hypotheses and identify appropriate statistical
				tests.
				CO5: Perform appropriate statistical tests using
				R Create and edit visualizations.
				CO6: Able to know linear models and regression.
				CO1: Comprehend mathematical Laws and logic
				CO2: Communicate effectively mathematical
				ideas/results verbally/in writing
			Mathematical	CO3: Apply the Knowledge of Number Theory
II-I	R1621052	C2102	Foundations of	in the areas of such cryptography
			Computer Science	CO4: Demonstrate skills in solving
				mathematical problems
				CO5: Manipulate and analyze data numerically
				and graphically using appropriate software
				CO6: Demonstrate knowledge of mathematical
				modelling and proficiency in using mathematical
				software
				CO1: An ability to define different number
				systems, binary addition and subtraction, 2's
				complement representation and operations with
				this representation.
				CO2: An ability to understand the different
				switching algebra theorems and apply them for
				logic functions.



II-I	R1621053	C2103	Digital Logic Design	CO3: An ability to define the Karnaugh map for a few variables and perform an algorithmic reduction of logic functions. CO4: An ability to define the other minimization methods for any number of variables Variable Entered Mapping (VEM) and Quine-MeCluskey (QM) Techniques and perform an algorithmic reduction of logic functions. CO5: Design Moore and Mealy models CO6: Illustrate various registers and counters.
II-I	R1621054	C2104	Python Programming	CO1: Making Software easily right out of the box. CO2: Experience with an interpreted Language. CO3: To build software for real needs. CO4: Prior Introduction to testing software CO5: Apply OOPS concepts of Python and Exceptions. CO6: Explain standard libraries in python
II-I	R1621055	C2105	Data Structures through C++	CO1 Distinguish between procedures and object- oriented programming. Programming CO2: Apply advanced data structure strategies for exploring complex data structures CO3: Compare and contrast various data structures and design techniques in the area of Performance. CO4: Implement data structure algorithms through C++. Incorporate data structures into the applications such as binary search trees, AVL and B Trees. CO5: Implement all data structures like stacks, queues, trees, lists and graphs and compare their Performance and trade offs CO6: Explain sorting techniques.
II-I	R1621121	C2106	Software Engineering	CO1: Define and develop a software project from requirement gathering to implementation. CO2: Obtain knowledge about principles and practices of software engineering. CO3: Focus on the fundamentals of modelling a software project. CO4: Explain coding techniques and testing tools. CO5: Design and software quality management. CO6: Analysing of software maintenance process models



CO1: Know and be able to describe the general software architecture of programs that use 3D computer graphics. CO2: Know and be able to discuss hardware system architecture for computer graphics. This Includes, but is not limited to: graphics pipeline, frame buffers, and graphic accelerators /co-processors. CO3: Know and be able to select among models for lighting/shading: Colour, ambient light; distant and light with sources; Phong reflection model; and shading (flat, smooth, Gour and, Phong).
CO2: Know and be able to discuss hardware system architecture for computer graphics. This Includes, but is not limited to: graphics pipeline, frame buffers, and graphic accelerators CO3: Know and be able to select among models for lighting/shading: Colour, ambient light; distant and light with sources; Phong reflection model; and shading (flat, smooth, Gour and,
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II-II R1622121 C2201 Computer Graphics Computer Graphics System architecture for computer graphics. This Includes, but is not limited to: graphics pipeline, frame buffers, and graphic accelerators /co-processors. CO3: Know and be able to select among models for lighting/shading: Colour, ambient light; distant and light with sources; Phong reflection model; and shading (flat, smooth, Gour and,
II-II R1622121 C2201 Computer Graphics Computer Graphics Computer Graphics Co-processors.
II-II R1622121 C2201 Computer Graphics frame buffers, and graphic accelerators /co-processors. CO3: Know and be able to select among models for lighting/shading: Colour, ambient light; distant and light with sources; Phong reflection model; and shading (flat, smooth, Gour and,
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Phong).
CO4: Design adding shadows of objects,
rendering models.
CO5: Designing of Fractals and Self similarity.
CO6: Overview of ray tracing.
CO1: Understand Java programming concepts
and utilize Java Graphical User Interface in
Program writing
CO2: Write, compile, execute and troubleshoot
Java Java programming for networking concepts.
II-II R1622052 C2202 Programming CO3: Build Java Application for distributed
environment
CO4: Design and develop multi-tier applications.
CO5: Identify and Analyze Enterprise
applications.
CO6: Explain AWT Tools
CO1: Identify, interpret and analyze stakeholder
needs.
CO2: Identify and apply relevant problem-
solving methodologies.
II-II R1622122 C2203 E-Commerce CO3: Design components, systems and/or
processes to meet required specifications
CO4: Design components, systems and/or
processes to meet required specifications
CO5: Demonstrate research skills
CO6: Designing of Multimedia concepts.
CO1: Students can understand the architecture of
modern computer.
CO2: They can analyze the Performance of a
computer using performance equation
Computer CO3: Understanding of different instruction
II-II R1622054 C2204 Organization types.
CO4: Students can calculate the effective address
of an operand by addressing modes.



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				CO5: They can understand how computer stores
				positive and negative numbers.
				CO6: Understanding of how a computer
				performs arithmetic operation of positive and
				negative numbers.
				CO1: Ability to find solutions to the complex
				problems using object-oriented approach
				CO2: Ability to find solutions to the complex
			Object Oriented	problems using object-oriented approach.
II-II	R1622123	C2205	Analysis and	CO3: Identify classes and responsibilities of the
			Design using	problem domain
			UML	CO4: Basic concepts of Behavioural models.
				CO5: Advanced Behavioural models
				CO6: Design component and deployment.
				CO1: Describe syntax and semantics of
				programming languages
				CO2: Explain data, data types, and basic
			Principles of	statements of programming languages
II-II	R1622056	C2206	Programming	CO3: Design and implement subprogram
			Languages	constructs, Apply object-oriented, concurrency,
				and event handling programming constructs
				CO4: Develop programs in Scheme, ML, Prolog.
				CO5: Understand and adopt new programming
				languages
				CO6: Explain the concept of logic programming
				languages.
				CO1: Students are assessed on their ability to
				communicate and apply UCD methods in the
				capstone project course.
				CO2: Assessment includes examination of team
III-I	R1631121	C3101	Human Computer	reports and how HCI students can discuss
			Interaction	challenges and solutions for adapting UCD
				methods to fit the practical needs of an actual
				project
				CO3: Understanding Business Functions.
				CO4: Explain Principles of good screen design.
				CO5: Illustrate screen-based controls
				CO6: Explain effective feedback guidance and
				assistance
				CO1: Documentation will demonstrate good
				organization and readability
				CO2 File processing projects will require data
				organization, problem solving and research.
				CO3: Scripts and programs will demonstrate
				simple effective user interfaces.
			1	simple effective user interfaces.



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			Unix and Shell	CO4: Scripts and programs will demonstrate
III-I	R1631052	C3102	Programming	effective use of structured programming.
				CO5: Scripts and programs will be accompanied
				by printed output demonstrating completion of a
				test plan.
				CO6: Testing will demonstrate both black and
				glass box testing strategies.
				CO1: Construct a Web Application using
				Servlets.
				CO2: Construct a Web application using Java
				Server Pages
			Advanced Java	CO3: Construct an enterprise application using
III-I	R1631122	C3103	Programming	Session Beans
			8	CO4: Construct an enterprise application using
				Entity Beans linked with Database
				CO5: Construct an asynchronous enterprise
				application using Message-Driven Beans
				CO6: Construction of connectivity between JAVA and JDBC.
				CO1: Describe a relational database and object-
				oriented database.
				CO2: Create, maintain and manipulate a
				relational database using SQL
			- 1	CO3: Describe ER model and normalization for
			Database	database design.
III-I	R1631054	C3104	Management	CO4: Examine issues in data storage and query
			Systems	processing and can formulate appropriate
				solutions.
				CO5: Understand the role and issues in
				management of data such as efficiency, privacy,
				security, ethical responsibility, and strategic
				advantage.
				CO6: Design and build database system for a
				given real world problem
				CO1: Design various Scheduling algorithms
				CO2: Apply the principles of concurrency
				CO3: Design deadlock, prevention and
			Operating	avoidance algorithms
III-I	R1631055	C3105	Systems	CO4: Compare and contrast various memory
"" 1	111031033	23103	Systems	management schemes.
				CO5: Design and implement a prototype file
				system. CO6: Perform administrative tasks on Linux
				Servers
				CO1: Understand OSI and TCP/IP models.



III-II	R1632051	C3201	Computer Networks	CO2: Analyze MAC layer protocols and LAN technologies CO3: Design applications using internet protocols CO4: Understand routing and congestion control algorithms CO5: Understand how internet works CO6: Designing of Transport and application Layer.
III-II	R1632121	C3202	Data Mining	CO1: Understand stages in building a Data Warehouse CO2: Understand the need and importance of preprocessing techniques CO3: Understand the need and importance of Similarity and dissimilarity techniques. CO4: Analyze and evaluate performance of algorithms for Association Rules. CO5: Analyze Classification and Clustering algorithms. CO6: Explain in detail about Cluster analysis.
III-II	R1632122	C3203	Web Technologies	CO1: Analyze a web page and identify its elements and attributes. CO2: Create web pages using XHTML and Cascading Styles sheets CO3: Build dynamic web pages. CO4: Build web applications using PHP. CO5: Programming through PERL and Ruby CO6: Write simple client-side scripts using AJAX
III-II	R1632054	C3204	Software Testing Methodologies	CO1: Understand the basic testing procedures. CO2: Able to support in generating test cases and test suites CO3: Able to test the applications manually by applying different testing methods and automation tools. CO4: Apply tools to resolve the problems in Real time environment. CO5: Design state graphs and transition testing. CO6: Understanding of Software testing tools.
III-II	R163212B	C3205	Operations Research	CO1: Methodology of operation research. CO2: Linear programming solving methods. CO3: Design Integer Programming. CO4: Analyse Network Flows. CO5: Multi-criteria decision techniques. CO6: Decision making under the uncertainty and risk.



IV-I	R1641051	C4101	Cryptography and Network Security	CO1: To be familiarity with information security awareness and a clear understanding of Its importance. CO2 To master fundamentals of secret and public cryptography CO3: To master protocols for security services CO4: To be familiar with network security threats and countermeasures CO5: To be familiar with network security designs using available secure solutions (such as PGP, SSL, IPS) CO6: Ability to know various system securities.
IV-I	R164105C	C4102	Mobile Computing	CO1: Able to think and develop new mobile application CO2: Able to take any new technical issue related to this new paradigm and come up with a solution(s). CO3: Able to develop new ad hoc network applications and/or algorithms/protocols. CO4: Able to understand & develop any existing or new protocol related to mobile environment s. CO5: Able to understand synchronization. CO6: Able to know various Manets.
IV-I	R1641121	C4103	Data Ware Housing and Business Intelligence	CO1: Describe the scope and application of business intelligence and decision support. CO2: Design systems for sourcing and structuring data to provide an integrated, non-volatile collection of data for decision support using data warehouses; CO3: Design multidimensional data models and implement them using star schemas and relational databases. CO4: Communicate and foster realistic expectations of the role of OLAP technology and business intelligence systems in management and decision support CO5: Explain the need for evolutionary development approaches to developing business intelligence and data warehouse systems; CO6: Develop a simple business intelligence system using an OLAP tool
				CO1 The Learner is equipped with the knowledge of estimating the Demand and demand elasticities for a product and the knowledge of understanding of the Input-



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IV-I	R1641054	C4104	Managerial Economics and Financial Analysis	Output-Cost relationships and estimation of the least cost combination of inputs. CO2: One is also ready to understand the nature of different markets and Price Output determination under various market conditions and also to have the knowledge of different Business Units. CO3: The Learner is able to prepare Financial Statements and the usage of various accounting tools for Analysis and to evaluate various investment project proposals with the help of capital budgeting techniques for decision making. CO4: Explain the types of Business Cycles.
				CO5: Basic concepts of accounting. CO6: Able to Know various Capital Budgeting.
IV-I	R164105A	C4105	Big Data Analytics	CO1: Preparing for data summarization, query, and analysis. CO2: Applying data modelling techniques to large data set CO3: Creating applications for Big Data analytics. CO4: Building a complete business data analytic solution CO5: Construct the Pig Architecture. CO6: Applying structure to Hadoop data with Hive.
IV-I	R164105E	C4106	Software Project Management	CO1: To match organizational needs to the most effective software development model CO2: To understand the basic concepts and issues of software project management CO3: To effectively Planning the software projects CO4: To implement the project plans through managing people, communications and change CO5: To select and employ mechanisms for tracking the software projects CO6: To conduct activities necessary to successfully complete and close the Software projects
				CO1: Develop a familiarity with distributed file systems CO2: Describe important characteristics of distributed systems and the salient architectural features of such systems.



IV-II	R1642051	C4201	Distributed Systems	CO3: Describe the features and applications of important standard protocols which are used in distributed systems CO4: Gaining practical experience of interprocess communication in a distributed environment CO5: Understand the distributed file systems. CO6: Illustrate transactions and Replications.
IV-II	R1642052	C4202	Management Science	CO1: After completion of the Course the student will acquire the knowledge on management functions, global leadership and organizational behaviour. CO2: Will familiarize with the concepts of functional management project management and strategic management. CO3: Design a Functional managements. CO4: Learning about Project management. CO5: Analysis steps in strategic management. CO6: Basic concepts of MIS and MRP.
IV-II	R1642121	C4203	Management Information System	CO1: MIS brings to the notice of the management strength (i.e., strong points) of the organization, to take advantage of the opportunities available. CO2: MIS reports on production statistics regarding rejection, defective and spoilage and their effect on costs and quality of the products. CO3: Analyze System information and decision theory. CO4: Identifying information needed to SDM. CO5: Discuss Information System application. CO6: Development of information systems.
IV-II	R164212A	C4204	Cyber Security	CO1: Cyber Security architecture principles CO2: Cyber Security architecture principles. CO3: Identifying different classes of attacks CO4: Cyber Security incidents to apply appropriate response CO5: Describing risk management processes and practices CO6: Evaluation of decision-making outcomes of Cyber Security scenarios.
IV-II	R1642125	C4205	Seminar	Able to know about Seminar.
IV-II	R1642126	C4206	Project	Design Engineering solutions to complex problems in systematic manner.