

Bachelor of Commerce

Syllabus for Vocational Computer Applications (English Medium) - Semester VI

Old Syllabus	Proposed Syllabus
Title of the Paper: Introduction to Visual Programming	Title of the Paper : Introduction to Artificial Intelligence and Scripting language
Subject Code : 606018	Subject Code : -

Title of the Paper	Cr	L	P/T	D (EE)	EE (Theory)	EE (Practical)	IE	T
Introduction to Artificial Intelligence and Scripting language	4	2	4	2 hrs.	50	25	25	100

#L=Lectures per week, Cr=Credits, P/T=Practical/Tutorials, D=External Exam Duration, EE=External Examination, IE=Internal Examination, T=Total Marks

Old Syllabus	Proposed Syllabus
<p style="text-align: center;"><u>Course Objectives:</u></p> <ul style="list-style-type: none"> • To help students to create projects in VB that will help them in meeting the industry standards • To recognize and understand the needs of VB Programming • To develop skills and competencies require for the industry • Identify and use the features of a Visual Basic (VB) development environment. • Use the properties and methods of forms and controls to create VB programs. • Write procedures to perform input, processing, and output. • Locate, resolve, and handle various types of programming errors. • Declare and use variables of different data types in a VB program. • Write statements that use various mathematical operators. • Create programs that use decisions and repetition. <p style="text-align: center;"><u>Learner Outcomes:</u></p> <p>Students will be able to:</p> <ul style="list-style-type: none"> • Gain in Depth knowledge of concepts and definitions of Visual Programming • Express constants and arithmetic operations • Distinguish variable and data types • Recognize and arrange control structures • Design a complete program using visual programming concepts. • Prepare, Manage and Analyse project in visual programming 	<p style="text-align: center;"><u>Course Objectives:</u></p> <ul style="list-style-type: none"> • To understand various AI concepts • To enable the students to identify and describe problems that are amenable to solution by AI methods Develop familiarity with the JavaScript language • Develop basic programming skills using JavaScript • Become familiar with common libraries and tools that are used in web application development. <p style="text-align: center;"><u>Learner Outcomes:</u></p> <p>The students will be able to:</p> <ul style="list-style-type: none"> • Understand various problems which will be solvable by using AI concepts • Learn the fundamental knowledge of Artificial Intelligence • Analyse the implications of applying AI systems to organizations and future of work • Use operators, variables, arrays, control structures, functions and objects in JavaScript. • Create and use JavaScript programs, Identify popular JavaScript Libraries • Create dynamic styles & animation on a web page • Use regular expressions for form validation

Old Syllabus		Proposed Syllabus							
Unit	Topic and Details Old Syllabus	Module	Module Specific Objectives	Content	Weightage	Instruction Time (No. of lectures of 50 Min each)	Credits	Evaluation	
								IE Weightage	EE Weightage
1.	Introduction to Visual Programming - I <ul style="list-style-type: none"> ● Event Driven Programming ● VB Toolbox ● Form Window ● Project Explorer Window ● Properties Window ● Form layout Window ● Visual Basic Controls, Methods and Properties ● Variables and constants ● VB Data Types ● Creating an Application Using Controls like Text box, picture box, image box, label box, list box, combo box and check box 	1	To learn the concepts of AI	Unit I: Artificial Intelligence Introduction: Concepts & definitions of AI by different scholars, Brief history of AI, Can Machines think?, Concept of mind, reasoning, computation State space search: Generate and test, Simple search, Depth First Search (DFS), Breadth First Search (BFS), Comparison and quality of solutions. Heuristic Search: Best First Search (BFS), Hill Climbing, Solution Space Optimal Path Solutions: A* algorithm.	25	15	1	5	15
2	Operators, Decisions, Conditions & Loops <ul style="list-style-type: none"> ● Arithmetic, Relational and Logical Operators ● If-Then-Else and nested if statements, 		<ul style="list-style-type: none"> ● To study propositional logic and first order predicate logic and use the 	Unit II: Knowledge Representation Propositional & Predicate Logic: Syntax and semantics for propositional logic(PL) and first order propositional logic(FOPL),	25	15	1	5	15

	<ul style="list-style-type: none"> For-Next, Do-While, and Do-Until loops 		<p>technique to solve logical reasoning problems.</p> <ul style="list-style-type: none"> To develop and use fuzzy arithmetic tools in solving problems, 	<p>Properties of well-formed formula (wff), Inference rules.</p> <p>First Order Predicate Logic: Syntax of Predicate Logic, Prenex Normal Form (PNF), (Skolem) Standard Form, Applications of FOPL.</p> <p>Deductive Inference Rules and Methods: Basic Inference Rules and Application in PL, Basic Inference Rules and Application in FOPL, Resolution Method in PL and FOPL.</p> <p>Fuzzy Logic: Fuzzy Sets, Fuzzy Operators & Arithmetic, Membership Functions, Fuzzy Relations.</p>					
2.	<p>Procedures and Menus</p> <ul style="list-style-type: none"> Procedures Functions Calling Procedures Sub Procedures (val and ref parameters) Validating data input by the user About Menus Expended Menu Editor Windows Create menu options on a user interface 	2	<p>Students will learn :</p> <ul style="list-style-type: none"> About JavaScript language. To use best-practice idioms and patterns. 	<p>SCRIPTING LANGUAGE</p> <ul style="list-style-type: none"> JAVA SCRIPT – I JS Basic Variables If...Else Switch Operators JS Popup Boxes Functions, For Loop While Loop Break Loops For...In 	25	15	1	5	20

4	Array <ul style="list-style-type: none"> ● About Array ● Types of Array ● Declaring Array ● Specifying Arrays ● Multidimensional Arrays ● Control Array 		tudents will learn : <ul style="list-style-type: none"> ● Concepts commonly used in dynamic language programming, such as introspection, higher-order functions, and closures. ● About common libraries and tools that are used in web application development. 	JAVA SCRIPT – II <ul style="list-style-type: none"> - Events - Try...Catch - Throw on error - Special Text Objects - String, Date - Array - Boolean - Math - JS Advanced - JS Browser - JS Cookies - JS Validation - JS Animation 	25	15	1	10	25
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Evaluation Scheme:

A. Internal Examination:

The internal testing should be continual and spread over the semester

The pattern of the internal exam would be as follows:

- 2 Class Test (Written) exam of 25 Marks
- Class Assignments of 25 Marks

Out of above three the average of best two will be considered as internal marks.

B. External Examination:

[Theory]

The pattern of the written exam would be as follows:

- The Theory exam of 50 Marks:
- Q. 1 will be compulsory (2 questions, 1 Question from each unit will be asked for 20 marks)
- Any 2 questions from Q.2 to Q.5 should be answered, carrying 15 marks each.

[Practical]

- Practical exam of 25 marks

References:

A. Essential Reading

- a. Artificial Intelligence: A Modern Approach, 3e, Stuart Jonathan Russell, Peter Norvig, Prentice Hall Publications (2010)
- b. Callihan (2015), HTML Essentials (2nd Edition), Medtech
- c. Flanagan, D. (2011). JavaScript: The Definitive Guide

B. Additional Reading

- a. Julie Meloni, J. K. (2018). Teach yourself HTML, CSS, and JavaScript All in One (3rd Edition ed.). Pearson.
- b. Pollock, J. (2013). Javascript – the Beginner’s Guide (4th Edition ed.). Tata Mcgrowhill.
- c. Artificial Intelligence A Systems Approach, M Tim Jones, Firewall media, New Delhi (2008)
- d. A First course in Artificial Intelligence, Deepak Khemani, Tata McGraw Hill Education (India) private limited (2013)