भारतीय गैर न्यायिक

एक सौ रुपये

रु. 100

Rs. 100

ONE HUNDRED RUPEES

सत्यमेव जयते

भारत INDIA

INDIA NON JUDICIAL

7 AUG 2023

उत्तर प्रदेश UTTAR PRADESH

GS 515156

THIS AGREEMENT made on this 28th day of August in the year two thousand and Twenty Three BETWEEN Christ Church DEGREE COLLEGE, KANPUR, affiliated to University of chatrapati shahu ji Maharaj University, situated at Kanpur through its Principal and secretary Governing Body , Prof. Joseph Daniel who is duly authorised to sign this Agreement, (hereinafter referred to as "the College") (which expression shall unless it be repugnant to the context or meaning thereof be deemed to include its successors, executors, administrators or assigns) of the ONE PART AND UPTEC COMPUTER CONSULTANCY LIMITED, promoted as a Joint Venture Company by UP Electronics Corporation Limited (A Government Undertaking) and incorporated under the Companies Act, 1956, having its registered office at 16 Rana Pratap Marg, Lucknow hereinafter referred to as `UPTEC' (which expression shall unless it be repugnant to the context or meaning thereof be deemed to include its associated companies/associates, successors, executors, administrators or assigns) of the OTHER PART;

12966 26: 11: 2000

[illegible] का प्रयोजन

[illegible] का नाम

पुत्र/[illegible]

पूरा पता

स्टाम्प की धनराशि 100

विनोद कुमार वर्मा (स्टाम्प विक्रेता)

ल0न0–141/12/13 ला0की0 अवधि

[illegible] कोर्ट कम्पाउण्ड कानपुर नगर

[illegible]

16 [illegible]

WHEREAS the College has been established under the aegis of Christ Church Degree College and is recognized/affiliated with Chatrapati Sahu Ji Maharaj University, Kanpur.

AND WHEREAS UPTEC is a Company engaged in the field of Computer Education & Training, Marketing of IT Products & Services, Content Development & Design & Software Development and Exports.

AND WHEREAS UPTEC, being an accredited institution for conducting Computer course of National Institute of Electronics & Information Technology (NIELIT – formerly DOEACC), (an autonomous Society under the Ministry of Communications and Information Technology, Government of India), has submitted a proposal to the College to establish a Value Hub Centre at the College to offer the job oriented training programmes to the students of the College. UPTEC having established itself as a credible organization providing job oriented IT educational services, shall set up Value HUB Centre which will provide the relevant in-demand technical and soft skills, practical training/internship and career guidance to make the students job ready.

AND WHEREAS the College has accepted the proposal and requested UPTEC to establish Value Hub Centre at the College;

And the parties therefore agreed to enter into an Agreement for collaborating with each other.

AND WHEREAS THE PARTIES HEREBY AGREED AS FOLLOWS:

1. That the College and UPTEC hereby agree to set up a Value Hub Centre at the College for conducting the Programmes as per the list of Programmes to be offered placed at Annexure 1;

2. That the College shall arrange to promote, enroll and register students for the Programmes. The Roles and Responsibilities of the College under this Agreement are more clearly specified in Annexure 2;

3. That the Roles and Responsibilities of UPTEC under this Agreement are more clearly specified in Annexure 3;

MUTUAL TRUST

4. That this Agreement will be followed in letter and spirit and mutual trust notwithstanding the terminology and technicalities of the document. UPTEC and the College commit to continue to work in good faith and follow fair practices and help in a way which safeguards the long term interests of both Organizations by increasing the mutual goodwill and credibility. This Agreement also evokes faith among the parties and as a gesture of adopting fair practices, both the parties agree not to compete with each other during the effective period of this Agreement and for a reasonable period after the expiry of this Agreement;

TERMINATION

5. It is mutually agreed that upon termination of this agreement for any reason whatsoever it shall not release either party hereto from any obligation which on the date of termination has already accrued to the other party (whether or not the amount of such liability has been computed) or which under the terms hereof or by its nature is a continuing obligation;

6. That this Agreement shall remain valid for a period of Five (05) Years from the date of this Agreement. The Agreement can be renewed on mutual consent of both parties. However, if this Agreement is not renewed and expires by efflux of time or otherwise terminated by any party, it will be incumbent on the parties to ensure completion of the remaining Programme, arrange for all infrastructure, manpower, etc. if any, and arrange for the examinations/certifications of all the students who have completed the Programme;

7. That this Agreement can be terminated by either party by giving Six (06) months prior notice, in writing, to the other party;

DISPUTES

8. That all disputes and difficulties of whatsoever nature arising out of and/or concerning the terms and conditions of this Agreement (including, without limitation, disputes or claims with respect to the effectiveness, interpretation, performance, amendment and termination of this Agreement) shall be referred by either party to a panel comprising of the Executive Director & CEO of UPTEC and the Convener- Vocational Course of the College for resolution;

9. In case the above referred panel is unable to resolve the dispute within 30 days of a dispute being referred to them, the same may be referred to arbitration. The Arbitration proceedings shall be carried under the prevailing law of Arbitration and shall be conducted in accordance with the Rules of Arbitration of the Indian Council of Arbitration and the award made in pursuance thereof shall be final and binding on both the parties. The venue for arbitration shall be at Lucknow and that the parties agree that only the Courts of Lucknow shall have jurisdiction to entertain any proceedings related to this agreement whether during pendency, or after termination. No other Court shall have jurisdiction.

IN WITNESS WHEREOF THE SAID PARTIES HEREBY HAVE EXECUTED THESE PRESENTS ON THE DAY, MONTH AND YEAR FIRST ABOVE WRITTEN.

WITNESSES:

1. (Atul Kumar Arya)
2. Deepak Bajpai

For and on behalf of UPTEC

Ms. Shruti
Director

UPTEC Computer Consultancy Ltd.
UPTEC

WITNESSES:

✓ 1. abhattacharye
Prof. Anindita Bhattacharye
✓ 2. Prof. Satya Prakash Singh

For and on behalf the College

Daniel
✓Prof Joseph Daniel
Principal and Secretary Governing Body

CHRIST CHURCH COLLEGE
PRINCIPAL
KANPUR

ANNEUXRE 1

Programmes and Duration

SL NO	PROGRAMME	DURATION
1.	Office Automation using MS-Office	02 Years (04 Semesters)
2.	Computer Applications	02 Years (04 Semesters)

ANNEUXRE 2

SERVICES TO BE PROVIDED BY THE COLLEGE

1. To make required infrastructures available.
2. To promote the training courses to its students jointly with UPTEC.
3. To install signboard and other signages of Value Hub Centre prominently at appropriate place;

ANNEXURE 3

SERVICES TO BE PROVIDED BY UPTEC

1. To assist/ provide consultancy for establishing the Class / Lab facility for the courses.
2. To assist in implementation and successful running of the program at the college.
3. To provide Faculty as per the availability from UPTEC on per lecture chargeable basis.

Daniel

VOCATIONAL COURSE
ON
OFFICE AUTOMATION USING MS OFFICE

Title of the course : Office Automation Using Ms-Office

Duration : 6 months

Nodal department of HEI to run course : Computer Application, Jagran College of Arts, Science & Commerce, Saket Nagar, Kanpur

Broad Area/Sector : Office Automation

Sub Sector : Ms-Office

Nature of the course : Independent

Aligned NSQF Level : Foundation

Name of Proposed Skill Partner : RCPL Pvt. Ltd.

Job'Prospects : Office Automation, Data Entry, Data Analyst, Data Presenter, Desktop Publishing.

UNIT	TOPIC	GENERAL/SKILL DEVELOPMENT	THEORY/PRACTICAL/ INTERSHIP/TRAINING	NO. OF THEORY HOURS	NO. OF SKILL HOURS
UNIT 1	BASICS OF COMPUTER Introduction to Computer,Memory, CPU,I/O Devices, Computer Network	General	Theory	4	
UNIT2	OPERATING SYSTEMS MS-WINDOWS Operating System,Windows Desk top – GUI,Desktop icons and their functions, Dialog Boxes, Task Bar,Parts of Windows,Key board short keys or hotkeys	General	Theory	4	
	Working with Notepad & Word Pad	Skill Development	Practical		5
UNIT 3	OFFICE APPLICATIONS – I, MS-WORD	General	Theory	2	
	➢ Creating,editing,saving and printing text documents ➢ Font and paragraph formatting ➢ Simple character formatting ➢ Inserting tables,smart art,page breaks ➢ Using lists and styles ➢ Working with images ➢ Using Spelling and Grammar check ➢ Understanding document properties ➢ Mail Merge	Skill Development	Practical		10

UNIT 4	OFFICE APPLICATIONS – II, MS-EXCEL	General	Theory	2	
	➢ Spreadsheet Basics ➢ Creating, editing, saving and printing spreadsheets ➢ Working with functions & formulas ➢ Modifying worksheets with colour & auto formats ➢ Graphically representing data: Charts & Graphs ➢ Speeding data entry: Using Data Forms ➢ Analyzing Data: Data Menu, Sub total, Filtering Data ➢ Formatting work-sheets ➢ Securing &Protecting Spreadsheets.	Skill Development	Practical		10
UNIT 5	OFFICE APPLICATIONS - III MS OFFICE: MS-ACCESS	General	Theory	2	
	➢ MS Access: Introduction, ➢ Planning a Database, ➢ Access Screen, ➢ Creating a New Database, ➢ Creating Tables, ➢ Working with Forms, ➢ Creating queries, ➢ Finding Information in Databases, ➢ Types of Reports ➢ Printing & Print Preview, ➢ Importing data from other databases viz. MS Excel etc	Skill Development	Practical		10
UNIT 6	OFFICE APPLICATIONS - IV MS OFFICE: MS-POWER POINT	General	Theory	2	
	➢ Opening, viewing, creating, and printing slides ➢ Applying auto layouts ➢ Adding custom animation ➢ Using slide transitions ➢ Graphically representing data: Charts & Graphs ➢ Creating Professional Slide for Presentation.	Skill Development	Practical		10
UNIT 7	INTERNET & ADVANCED COMMUNICATION	General	Theory	4	
	➢ Understanding how to search/Google ➢ Internet and Web Browsers ➢ Bookmarking and Going to a specific website ➢ Copy and paste Internet content into your word file and emails ➢ Understanding social media platforms such as Facebook & Many more ➢ Learn with best practices	Skill Development	Practical		10

Suggested Readings:

1. *Fundamentals of computers - V.Rajaraman - Prentice- Hall of india*
2. *Microsoft Office 2007 Bible - John Walkenbach,Herb Tyson,Faithe Wempen,cary N.Prague,Michael R.groh,Peter G.Aitken, and Lisa a.Bucki -*

Wiley India pvt.ltd.

3. The complete reference Linux - Richard Petersen - Tata McGraw - Hill Edition 4. A Conceptual Guide to OpenOffice.org
4. R. Gabriel Gurley- Create Space Independent Publishing Platform, 2008
5. Introduction to Information Technology - Alexis Leon, Mathews Leon, and Leena Leon, Vijay Nicole Imprints Pvt. Ltd., 2013.
6. Computer Fundamentals - P. K. Sinha Publisher: BPB Publications
7. Operating System Concepts - by Abraham Silberschatz, Greg Gagne, and Peter Baer Galvin Publisher: Wiley; 8 edition (July 29, 2008)
8. Computer Networking 6th ed. - J.F. Kurose and K.W. Ross - Pearson;
9. Data Communications and Networking - Behrouz A. Forouzan, 2nd Edition - McGraw Hill Education;
10. Discovering the Internet: Complete - Shelly Cashman 4th Edition - Course Technology
11. Computer & Internet Basics Step-by-Step - Etc-end the Clutter - Infinity Publishing
12. https://en.wikipedia.org
13. https://bosslinux.in/sites/default/files/BOSS4.0-Usermanual.pdf (For EduBOSS3.0)
14. https://wiki.openoffice.org/wiki/Documentation 15. http://windows.microsoft.com/en-in/windows/windows-basics-all-topics

②

To be added with
already approved Voc. course
titled office Automation using MS office for sem I.

VOCATIONAL COURSE

ON

OFFICE AUTOMATION USING MS-OFFICE

SEM- 2

Rohan Sharma

28/4/22

Title of the Course : Office Automation Using Ms-Office

Duration : 6 Months

Nodal Department of HE1 to run course : Christ Church College, Kanpur

Broad Area/Sector : Office Automation

Sub Sector : LibreOffice

Nature of the Course : Independent

Aligend NSQF Level : Foundation

Name of Proposed Skill Partner : UPTEC Computer Consultancy Ltd.

Job Prospectus : Office Executive/Assistant,Call Center Executive/ Compulsory to Maximum state level clerical Jobs.

UNIT	TOPIC	GENRAL/SKILL DEVELOPMENT	THEORY/ PRACTICAL/ INTERNSHIP /TRAINING	NO. OF THEORY HOURS	NO. OF SKILLS HOURS
1	**Promo of LibreOffice Suite** ➢ LibreOffice promo ➢ Features of LibreOffice ➢ Uses of LibreOffice ➢ LibreOffice formats ➢ LibreOffice tutorials in Spoken Tutorial ➢ Applications of LibreOffice	General	Theory	2	
2	**What is Writer?** ➢ Introduction of Writer	General	Theory	1	
	➢ Parts of the main Writer window ➢ Title bar, Menu bar, Sidebar, Toolbars, Rulers & Status Bar ➢ How to create new document	Skill Development	Practical		2
3	**Working with Text Basics & Formatting Text & Pages**	General	Theory	1	

	➢ Introduction ➢ Selecting, cutting, copying & pasting the text ➢ Finding & Replacing the Text ➢ Checking Spelling & Grammar ➢ Using Auto Correct & Auto Text ➢ Formatting Paragraphs ➢ Formatting Characters ➢ Auto Formatting ➢ Formatting Numbered or bulleted list ➢ Inserting Page Break ➢ Changing Page Break ➢ Creating Headers & Footers ➢ Defining Borders and Backgrounds	Skill Development	Practical		4
4	**Printing, Exporting & Emailing** ➢ Quick export to PDF ➢ Page setup & Print Preview ➢ Controlling Printing	Skill Development	Practical		2
5	**What is Mail Merge**	General	Theory	1	
	➢ Creating a form letter ➢ How to Prepare data ➢ How to create documents ➢ Editing merged documents	Skill Development	Practical		2

6	**Introduction to Tables** ➢ Create simple & complex table ➢ Editing & deleting table contents ➢ Merging of two Tables ➢ Updating of Tables	Skill Development	Practical		4
7	**Images & Graphics** ➢ Creating & Editing of Images ➢ Adding Images to documents ➢ Cropping & Resizing Images ➢ Rotating & Drawing Images	Skill Development	Practical		2
8	**Introduction to Libre Office Calc** ➢ What is Calc, ➢ About spreadsheets, sheets and cells. ➢ Basic features – parts of main Calc window - Title & Menu Bar, Standard Toolbar, Formatting Toolbar, Formula Bar, Status Bar ➢ What is a cell, row, column, ➢ Create new document, enter data in one cell, save in Calc(CSV and other formats),opening/closing document. ➢ Save as ods, csv, xls, xlsx and export to PDF	General	Theory	2	-

	➢ How to enter numbers, text, numbers as text, date and time in Calc. ➢ How to use the Format Cells dialog box. ➢ How to Navigate between cells and in between sheets. ➢ How to select items in rows, columns and sheets.	Skill Development	Practical		7
9	**Working with Sheets & Formatting Data** ➢ Inserting and Deleting rows and columns Calc. ➢ Inserting and Deleting Sheets in Calc. ➢ Renaming Sheets ➢ Borders, Color, Formatting Text, Increasing Cell Size ➢ Formatting multiple lines of text, numbers, fonts, cell borders ,cell background ➢ Automatic Wrapping and Using manual breaks ➢ Merging cells, rows and columns, issues with using merge cells. ➢ Shrinking text to fit the cell	Skill Development	Practical		8

10	**Working with Data & Basic Data Manipulation**	General	Theory	4	
	➢ Speed up using Fill tools and Selection lists ➢ Paste and paste special (values, transpose) ➢ Pasting a spreadsheet into writer as a table • Introduction to Formulas – Sum, Average, basic formula (=a*b+c) ➢ Subtotal ➢ Different kinds of functions available in spreadsheet ➢ Sorting by Columns ➢ Filtering Data - Basics	Skill Development	Practical	-	8
11	**Introduction to Libre Office Impress**	General	Theory	1	
	➢ Basic Features ➢ Different Toolbars ➢ Save as MS PowerPoint and other formats PDF ➢ Export open MS Office Documents ➢ Reopen the file which we saved..	Skill Development	Practical	-	2
12	**Creating & Viewing Presentation**				
	➢ Creating a presentation document ➢ Bbasic formatting	Skill Development	Practical	-	8

	➢ Inserting Slides ➢ Copying Slides Using Tabs Font size and Color, ➢ Viewing Presentation document ➢ Views options – Normal, Outline, Master Layout ➢ Uses of different view options ➢ Master Pages Task Option under Master Pages Write notes in impress.				
13	**Slide Design & Custom Animation**	General	Theory	2	
	➢ Slide Creation ➢ Slide Show Slide Transition ➢ Automatic Show (with Preset Timings) ➢ Use of Escape button ➢ Adding sound in slides ➢ Sorting of slides Setting speed ➢ Use of Notes ➢ Printing of Notes ➢ Use of Font Effects ➢ Use of drawing toolbar ➢ Filling up the color ➢ Printing of notes ➢ Use of Slide placeholder	Skill Development	Practical	-	12

Suggested Readings:

1. Getting Started with LibreOffice 6.0 Paperback – Import, 14 February 2019 **by** Libreoffice Documentation Team (Author)
2. Getting Started with LibreOffice 5.0 (English, Paperback, Documentation Team Libreoffice)

VOCATIONAL COURSE

ON

OFFICE AUTOMATION USING MS-OFFICE

SEM-3

Title of the Course	:	Office Automation Using Ms-Office
Duration	:	6 Months
Nodal Department of HE1 to run course	:	Christ Church College, Kanpur
Broad Area/Sector	:	Office Automation
Sub Sector	:	Web Page
Nature of the Course	:	Independent
Aligend NSQF Level	:	Foundation
Name of Proposed Skill Partner	:	UPTEC Computer Consultancy Ltd.
Job Prospectus	:	Webpage Designing, Webpage Developer

UNIT	TOPIC	GENRAL/SKILL DEVELOPMENT	THEORY/ PRACTICAL/ INTERNSHIP/ TRAINING	NO. OF THEORY HOURS	NO. OF SKILLS HOURS
1	**Getting Acquainted with HTML** ➢ Introduction to the Internet ➢ Introduction to HTML Terminology ➢ How to Write HTML Code	General	Theory	1	-
2	**Basic Tags and Document Structure for Designing a Webpage**	General	Theory	1	-
	➢ HTML Tags ➢ Head Tags ➢ Title Tags ➢ Body Tags ➢ Saving an HTML Page	Skill Development	Practical		4
3	**Page Formatting & Creating Lists**	General	Theory	2	-
	➢ Adding a New Paragraph ➢ Adding a Line Break ➢ Inserting Blank Space ➢ Preformatted Text ➢ Changing a Page's Background Color ➢ Headings ➢ Horizontal Lines ➢ Numbered (Ordered) Lists ➢ Bulleted (Unordered) Lists ➢ Definition Lists, Nested Lists	Skill Development	Practical	-	4

4	**What are Links & Images**	General	Theory	1	
	➢ Text Links ➢ Image Links ➢ Opening a Page in a New Window or Tab ➢ Setting all Links on a Page to Open in a New Window or Tab ➢ Linking to an Area on the Same Page (Bookmarks) ➢ Linking to an E-mail Address ➢ Linking to Other Types of Files. ➢ Introduction to Images for Web pages ➢ Adding Images to Web pages ➢ Resizing an Image ➢ Resizing an Image ➢ Alternative (ALT) Text	Skill Development	Practical		4
5	**Creating Tables & Forms**	General	Theory	2	
	➢ Inserting a Table ➢ Table Borders ➢ Table Headers ➢ Complex Table ➢ About Forms ➢ Text Boxes ➢ Text Areas ➢ Check Boxes ➢ Menu Lists ➢ Radio Buttons ➢ The Submit Button	Skill Development	Practical	-	4

	➢ The Reset Button				
6	**Video and Audio**				
	➢ About Video and Audio Files ➢ Adding Audio ➢ Adding Video ➢ Using YouTube to Display Video	Skill Development	Practical		1
7	**Cascading Style Sheets**	General	Theory	1	
	➢ CSS Syntax ➢ Types of CSS(Inline, Internal & External) ➢ Creating an External CSS ➢ ID and Class	Skill Development	Practical		4
8	**Working With Text in CSS & Borders**	General	Theory	1	
	➢ Text Alignment & Color ➢ Fonts & Font Size ➢ Margin & Padding ➢ How to create Text Border ➢ Types of Borders	Skill Development	Practical		4
9	**Creating Backgrounds in CSS**	General	Theory	2	
	➢ How to Create Border ➢ Background Colors & Gradients ➢ Linear Gradient ➢ Radial Gradient ➢ Conical Gradient	Skill Development	Practical		4

10	**Adding a Navigation Bar in CSS**	General	Theory	1	
	➢ Colors & Images ➢ Image Opacity ➢ How to Create Navigation Bar ➢ Vertical Navigation Bar ➢ Horizontal Navigation Bar				3
11	**How to create Division of Page**	General	Theory	1	
	➢ Div Tag ➢ Padding ➢ Margin of Div Tag ➢ How to Create Login Page Using Div Tag	Skill Development	Practical		4
12	**Getting Acquainted with JavaScript &The Makeup of JavaScript**	General	Theory	2	
	➢ Introduction to JavaScript ➢ The <SCRIPT>…</SCRIPT> Tag ➢ JavaScript Statements ➢ External JavaScript ➢ What are JavaScript Variables? ➢ Creating (Declaring) Variables ➢ Local Variables and Global Variables ➢ Exploring JavaScript Data Types	Skill Development	Practical		10

13	**JavaScript Functions ,Conditions, Loops &**	General	Theory	3	
	➢ JavaScript Function Definition and Syntax ➢ JavaScript Operators ➢ IF & Switch Conditions ➢ JavaScript Loops ➢ For Loop ➢ While Loop ➢ Do while Loop ➢ Break & Continue	Skill Development	Practical		10

Suggested Readings:

1. Creating Web Pages For Dummies by Bud E. Smith,Arthur Bebak
2. Web Designing and Publishing by Prof. Satish Jain and M. Geetha Iyer
3. Mastering Html, Css & Javascript Web Publishing by Laura Lemay (Author), Rafe Colburn (Author), Jennifer Kyrnin

VOCATIONAL COURSE

ON

Office Automation Using Ms-Office

(SEM-4)

Title of the Course : Office Automation Using Ms-Office

Duration : 6 Months

Nodal Department of HE1 to run course : Christ Church College, Kanpur

Broad Area/Sector : Office Automation

Sub Sector : Artificial Intelligence and Internet of Things

Nature of the Course : Independent

Aligend NSQF Level : Foundation

Name of Proposed Skill Partner : UPTEC Computer Consultancy Ltd.

Job Prospectus : Data Analytics and Device & Hardware Engg.

UNIT	TOPIC	GENERAL/SKILL DEVELOPMENT	THEORY/PRATICAL/INTERSHIP/ TRAINING	NO. OF THEORY HOURS	NO. OF SKILLS HOURS
UNIT 1	**INTRODUCTION TO INTELLIGENCE AND ARTIFICIAL INTELLIGENCE**				
	➢ Introduction ➢ Objectives ➢ Some Simple ➢ Definition of A.I. ➢ Definition by Eliane Rich ➢ Definition by Buchanin and Shortliffe ➢ Another Definition by Elaine Rich ➢ Summary	General	Theory	6	
UNIT 2	**INTELLIGENT AGENTS**				
	➢ Introduction ➢ Objectives ➢ Definitions Agents and Rationality ➢ Example: A boundary following robot ➢ Task Environment of	General	Theory	13	

	Agents ➢ Rationality vs. Omniscience ➢ Autonomy and learning capability of the agent PEAS(Performance, Environment, Actuators, Sensors) Example An Automated Public Road Transport Driver Different Types of Task Environments ➢ Fully Observable vs. Partially Observable Environment ➢ Static vs. Dynamic Environment ➢ Deterministic vs. Stochastic Environment ➢ Episodic vs. Sequential Environment ➢ Single agent vs. Multi-agent Environment ➢ Discrete vs.				

	Continuous Environment Some Examples of Task Environments ➢ Crossword Puzzle ➢ Medical Diagnosis ➢ Playing Tic-tac-toe ➢ Playing Chess ➢ Automobile Driver Agent The Structure of Agents ➢ SR (Simple Reflex) Agents ➢ Model Based reflex Agents ➢ Goal-based Agents ➢ Utility-based Agents ➢ Learning Agents				
UNIT 3	**Sensors**				

	INTRODUCTION SENSORS CLASSIFICATION OF SENSORS TYPES OF SENSORS ➢ Position ➢ Occupancy and motion ➢ Velocity and Acceleration ➢ Force ➢ Acoustic ➢ Humidity ➢ Light ➢ Radiation ➢ Temperature ➢ Chemical ➢ Image ➢ Optical ➢ Gas ➢ Ultrasonic ➢ Hall ➢ Infrared sensors(IR) ➢ Biosensors ➢ Micro and Nanosensors	General	Theory	4	
UNIT 4	**ACTUATORS**				

	CLASSIFICATION OF ACTUATORS ➢ Electrical Actuators ➢ Electromechanical Actuators ➢ Electromagnetic Actuators ➢ Hydraulic Actuators ➢ Pneumatic Actuators ➢ Smart Materials Actuators ➢ Microactuators	General	Theory	4	
UNIT 5	**BUILDING IOT APPLICATIONS**				
	INTRODUCTION TO ARDUINO TYPES OF ARDUINO BOARDS Arduino Uno Arduino Leonardo Arduino 101	General	Theory	5	
UNIT 6	**INTRODUCTION TO ARDUINO IDE**	Skill Development	Practical		5

	➢ Features of Arduino IDE ➢ How to download and Install Arduino IDE? **PARTS OF ARDUINO IDE** ➢ Menu Bar ➢ Text Editor ➢ Output Pane **WRITING/EDITING CODE IN SKETCH** **COMPILING-DEBUGGING** **UPLOADING AND RUNNING FILE** **ROLE OF SERIAL MONITOR**				
UNIT 7	**LED PROGRAMMING**	Skill Development	Practical		5

	➢ Arduino board ➢ Breadboard ➢ LED **OPEN YOUR FIRST SKETCH** ➢ Void setup() ➢ Void loop() **VARIABLES AND INDENTIFIERS** **KEYWORDS** **BUILT-IN DATA TYPES** **VARIABLE SCOPE** **COMMENT** **PREPROCESSOR DIRECTIVE** ➢ The #include directive ➢ The #define directive				
UNIT 8	**PROGRAMMING CONCEPT**				
	OPERATORS ➢ Arithmetic Operators ➢ Relation and Logical Operation ➢ Assignment Operation ➢ Pointer Operation ➢ Bitwise Operation	Skill Development	Practical		7

	CONDITIONAL STATEMENTS AND LOOPS **DECISION MAKING USING RELATIONAL OPERATORS** ➢ The if statement ➢ The if-else statement ➢ The condition operator(?:) ➢ Nested if-else Statement ➢ The switch statement	Skill Development	Practical		8
	LOGICAL CONNECTIVES LOOPS ➢ While loop ➢ do- while loop ➢ for loop ➢ nested loops ➢ infinite loops ➢ THE break STATEMENT ➢ THE continue STATEMENT	Skill Development	Practical		8
UNIT 9	**PROJECT USING IOT**				

	➢ **Write a program sequential LED ON-OFF.** ➢ **Write a program to interface buzzer with arduino board to buzz ON-OFF with the delay of 1 sec.** ➢ **Write a program to interface bottom and LED so that Led-blink glow one button is press.** ➢ **Write a program to interface keypad with arduino board and display the key press on serial monitor.** ➢ **Write a program to interface LED's on pin number 11, 12, and 13 and blink alternatively at delay of 1 second.** ➢ **Write a program to sense soil moisture using soil moisture sensor.** ➢ **Write a Program to**	Skill Development	Practical		10

	sense water using water sensor. ➢ **Automatic Attendance and Classroom Environmental Monitoring**				
Total hours =75				32	43

Recommended Books: -

1. Rich E. & Knight K. (1991). Artificial Intelligence. Tata McGraw-Hill Publishing Company Limited
2. IOT and Publishing by Prof. Satish Jain.
3. Russell S. & Norvig P, Artificial Intelligence: A Modern Approach (Second Edition), (Pearson Education, 2003).

Format for syllabus Development of skill Development Course

Title of Course	Computer Application
Nodal Department of HEI To run course	
Board area/ sector	~~E.S.~~ I.T. Sect
Sub Sector-	I.T. & C.S.
Nature of course- Independent/ Progressive	Progressive
Name of suggestive sector Skill Council	Vocational Course (U.G.C.
Expected fees of the course- Fee/Paid	N/A
Stipend to Student expected from industry	2000 ₹
Number of Seats.......... 60	
Course Code.........	Credits-03(1 Theory, 2 Practical)
Max Marks......100....Minimum Marks....48	
Name of proposed skill Partner(Please specify, Name of industry, company etc for Practical/ training/ internship/OJT	Hardware & Software Companies M.O.U. (Signed)
Job prospects-Expected Fields of Occupation where student will be able to get job after completing this course in (Please specify name/type of industry, company etc.)	Computer oprator - Post in office section of some company (MOU Signed

Syllabus

Unit	Topics	General/Skill component	Theory/Practical/OJT/Internship/training	No of theory hours(Total-15 Hours+= 1 credit)	No of skill Hours (Total-60 Hours=2 credits)
I			Syllabus Encl.		
II					
III					
IV					
V					
VI					

Format for syllabus Development of skill Development Course

Suggested Readings: En Cl. Syll.

Suggested Digital platforms/web links for reading- Google & other Edu. Sites.

Suggested OJT/ Internship? Training/ Skill partner - Subhi & ~~E~~ Shree Computers, Etawah

Suggested Continuous Evolution Methods: —

Course Pre-requisites:

- No pre-requisite required, open to all
- To study this course, a student must have the subject…………… In class/12th/ certificate/ diploma
- If progressive, to study this course a student must have passed previous courses of this series.

Suggested equivalent online courses:

Any remarks/suggestions:

Notes:

- Number of units in Theory/Practical may vary as per need
- Total credits/semester-3(it can be more credits, but students will get only 3 credit/ semester or 6 credits/ Year
- Credits for Theory =01 (Teaching Hours =15)
- Credits for Internship/OJT/Training/Practical=02(Training Hours=60)

Detailed Syllabus

Computer Appreciation

Characteristics of Computers, Input, Output, Storage units, CPU, Computer System, Binarynumber system, Binary to Decimal Conversion, Decimal to Binary

Computer Organization

Central Processing Unit - Processor Speed, Cache, Memory, RAM, ROM, Booting, Memory- Secondary Storage Devices: Floppy and Hard Disks, Optical Disks CD-ROM, DVD, Mass Storage Devices: USB thumb drive. Managing disk Partitions, File System Input Devices - Keyboard, Mouse, joystick, Scanner, web cam, Output Devices- Monitors, Printers – Dot matrix, inkjet, laser, Multimedia- What is Multimedia, Text, Graphics, Animation, Audio, Images, Video; Multimedia Application in Education, Entertainment, Marketing. Names of common multimedia file formats, Computer Software- Relationship between Hardware and Software; System Software, Application Software, Compiler, names of some high level languages, free domain software.

Operating System

Microsoft Windows- An overview of different versions of Windows, Basic Windows elements, File management through Windows. Using essential accessories: System tools – Disk cleanup, Disk defragmenter, Entertainment, Games, Calculator, Imaging – Fax, Notepad, Paint, WordPad. Command Prompt- Directory navigation, path setting, creating and using batch files. Drives, files, directories, directory structure. Application Management: Installing, uninstalling, Running applications. Linux- An overview of Linux, Basic Linux elements: System Features, Software Features, File Structure, File handling in Linux: H/W, S/W requirements, Preliminary steps before installation, specifics on Hard drive repartitioning and booting a Linux system.

Word Processing

Word processing concepts: saving, closing, Opening an existing document, Selecting text, Editing text, Finding and replacing text, printing documents, Creating and Printing Merged Documents, Character and Paragraph Formatting, Page Design and Layout.

Editing and Profiling Tools: Checking and correcting spellings. Handling Graphics, Creating Tables and Charts, Document Templates and Wizards.

Spreadsheet Package

Spreadsheet Concepts, Creating, Saving and Editing a Workbook, Inserting, Deleting Work Sheets, entering data in a cell / formula Copying and Moving from selected cells, handling operators in Formulae, Functions: Mathematical, Logical, statistical, text, financial, Date and Time functions,

Director
Rishi Bh

Using Function Wizard.

Formatting a Worksheet: Formatting Cells – changing data alignment, changing date, number, character or currency format, changing font, adding borders and colors, Printing worksheets, Charts and Graphs – Creating, Previewing, Modifying Charts.

Integrating word processor, spread sheets, web pages.

Presentation Package

Creating, Opening and Saving Presentations, Creating the Look of Your Presentation, Working in Different Views, Working with Slides, Adding and Formatting Text, Formatting Paragraphs, Checking Spelling and Correcting Typing Mistakes, Making Notes Pages and Handouts, Drawing and Working with Objects, Adding Clip Art and other pictures, Designing Slide Shows, Running and Controlling a Slide Show, Printing Presentations.

Data Base Operations

Data Manipulation-Concept: Database, Relational Database, Integrity. Operations: Creating, dropping, manipulating table structure. Manipulation of Data: Query, Data Entry Form, Reports.

Information Technology and Society

Indian IT Act, Intellectual Property Rights – issues. Application of information Technology in Railways, Airlines, Banking, Insurance, Inventory Control, Financial systems, Hotel management, Education, Video games, Telephone exchanges, Mobile phones, Information kiosks, special effects in Movies.

Practical

Recommded books

P.K. Sinha and P. Sinha, " Foundations of Computing" , BPB Publication, 2008.
Sagman S, "MS Office for Windows XP", Pearson Education, 2007.
ITL Educational Society, "Introduction to IT", Pearson Education, 2009.
Miller M, "Absolute Beginners Guide to Computer Basics", Pearson Education, 2009.

(15)

To be added with
already approved Voc. Course
titled Computer Application for Sem. I

VOCATIONAL COURSE

ON

COMPUTER APPLICATION

(SEM-2)

Rohan Sharma

28/9/22

Title of the Course	:	Computer Application
Duration	:	6 Months
Nodal Department of HE1 to run course	:	Christ Church College, Kanpur
Broad Area/Sector	:	Computer Application
Sub Sector	:	Libre Office
Nature of the Course	:	Independent
Aligend NSQF Level	:	Foundation
Name of Proposed Skill Partner	:	UPTEC Computer Consultancy Ltd.
Job Prospectus	:	Office Executive/Assistant,Call Center Executive/ Compulsory to Maximum state level clerical Jobs.

UNIT	TOPIC	GENRAL/SKILL DEVELOPMENT	THEORY/ PRACTICAL/ INTERNSHIP /TRAINING	NO. OF THEORY HOURS	NO. OF SKILLS HOURS
1	**Promo of LibreOffice Suite** ➢ LibreOffice promo ➢ Features of LibreOffice ➢ Uses of LibreOffice ➢ LibreOffice formats ➢ LibreOffice tutorials in Spoken Tutorial ➢ Applications of LibreOffice	General	Theory	2	
2	**What is Writer?** ➢ Introduction of Writer	General	Theory	1	
	➢ Parts of the main Writer window ➢ Title bar, Menu bar, Sidebar, Toolbars, Rulers & Status Bar ➢ How to create new document	Skill Development	Practical		2
3	**Working with Text Basics** ➢ Introduction ➢ Selecting, cutting, copying & pasting the text ➢ Finding & Replacing the Text ➢ Checking Spelling & Grammar ➢ Using Auto Correct & Auto Text	Skill Development	Practical		4
4	**Formatting Text & Pages**	General	Theory	1	

	➢ Formatting Paragraphs ➢ Formatting Characters ➢ Auto Formatting ➢ Formatting Numbered or bulleted list ➢ Inserting Page Break ➢ Changing Page Break ➢ Creating Headers & Footers ➢ Defining Borders and Backgrounds	Skill Development	Practical		4
5	**Printing, Exporting & Emailing** ➢ Quick export to PDF ➢ Page setup & Print Preview ➢ Controlling Printing	Skill Development	Practical		2
6	**What is Mail Merge**	General	Theory	1	
	➢ Creating a form letter ➢ How to Prepare data ➢ How to create documents ➢ Editing merged documents	Skill Development	Practical		2
7	**Introduction to Tables** ➢ Create simple & complex table ➢ Editing & deleting table contents ➢ Merging of two Tables ➢ Updating of Tables	Skill Development	Practical		4

8	**Images & Graphics** ➢ Creating & Editing of Images ➢ Adding Images to documents ➢ Cropping & Resizing Images ➢ Rotating & Drawing Images	Skill Development	Practical		2
9	**Introduction to Libre Office Calc** ➢ What is Calc, ➢ About spreadsheets, sheets and cells. ➢ Basic features – parts of main Calc window - Title & Menu Bar, Standard Toolbar, Formatting Toolbar, Formula Bar, Status Bar ➢ What is a cell, row, column, ➢ Create new document, enter data in one cell, save in Calc(CSV and other formats),opening/closing document. ➢ Save as ods, csv, xls, xlsx and export to PDF	General	Theory	2	-
10	**Working with Cells** ➢ How to enter numbers, text, numbers as text, date and time in Calc. ➢ How to use the Format Cells dialog box.	Skill Development	Practical		4

	➢ How to Navigate between cells and in between sheets. ➢ How to select items in rows, columns and sheets.				
11	**Working with Sheets** ➢ Inserting and Deleting rows and columns Calc. ➢ Inserting and Deleting Sheets in Calc. ➢ Renaming Sheets	Skill Development	Practical		2
12	**Formatting Data**	General	Theory	1	
	➢ Borders, Color, Formatting Text, Increasing Cell Size ➢ Formatting multiple lines of text, numbers, fonts, cell borders ,cell background ➢ Automatic Wrapping and Using manual breaks ➢ Merging cells, rows and columns, issues with using merge cells. ➢ Shrinking text to fit the cell	Skill Development	Practical	-	4
13	**Working with Data & Basic Data Manipulation**	General	Theory	4	
	➢ Speed up using Fill tools and Selection lists	Skill Development	Practical	-	8

	➢ Paste and paste special (values, transpose) ➢ Pasting a spreadsheet into writer as a table • Introduction to Formulas – Sum, Average, basic formula (=a*b+c) ➢ Subtotal ➢ Different kinds of functions available in spreadsheet ➢ Sorting by Columns ➢ Filtering Data - Basics				
14	**Introduction to Libre Office Impress**	General	Theory	1	
	➢ Basic Features ➢ Different Toolbars ➢ Save as MS PowerPoint and other formats PDF ➢ Export open MS Office Documents ➢ Reopen the file which we saved..	Skill Development	Practical	-	2
15	**Creating & Viewing Presentation**				
	➢ Creating a presentation document ➢ Bbasic formatting ➢ Inserting Slides ➢ Copying Slides Using Tabs Font size and Color, ➢ Viewing Presentation document ➢ Views options – Normal,	Skill Development	Practical	-	8

	Outline, Master Layout ➢ Uses of different view options ➢ Master Pages Task Option under Master Pages Write notes in impress.				
16	**Slide Design & Custom Animation**	General	Theory	2	
	➢ Slide Creation ➢ Slide Show Slide Transition ➢ Automatic Show (with Preset Timings) ➢ Use of Escape button ➢ Adding sound in slides ➢ Sorting of slides Setting speed ➢ Use of Notes ➢ Printing of Notes ➢ Use of Font Effects ➢ Use of drawing toolbar ➢ Filling up the color ➢ Printing of notes ➢ Use of Slide placeholder	Skill Development	Practical	-	12

Suggested Readings:

1. Getting Started with LibreOffice 6.0 Paperback – Import, 14 February 2019 by Libreoffice Documentation Team (Author)
2. Getting Started with LibreOffice 5.0 (English, Paperback, Documentation Team Libreoffice)

VOCATIONAL COURSE

ON

COMPUTER APPLICATION

(SEM-3)

Title of the Course : Computer Application

Duration : 6 Months

Nodal Department of HE1 to run course : Christ Church College, Kanpur

Broad Area/Sector : Computer Application

Sub Sector : Web-Page

Nature of the Course : Independent

Aligend NSQF Level : Foundation

Name of Proposed Skill Partner : UPTEC Computer Consultancy Ltd.

Job Prospectus : Webpage Designing, Webpage Developer

UNIT	TOPIC	GENRAL/SKILL DEVELOPMENT	THEORY/ PRACTICAL/ INTERNSHIP/ TRAINING	NO. OF THEORY HOURS	NO. OF SKILLS HOURS
1	**Getting Acquainted with HTML** ➢ Introduction to the Web Development ➢ What is HTML ➢ How to Write HTML Code	General	Theory	1	-
2	**HTML Tags**	General	Theory	1	-
	➢ HTML Tags ➢ Head Tags ➢ Title Tags ➢ Body Tags ➢ Saving an HTML Page	Skill Development	Practical		4
3	**Formatting Tags**	General	Theory	1	
	➢ Adding a New Paragraph ➢ Adding a Line Break ➢ Inserting Blank Space ➢ Preformatted Text ➢ Changing a Page's Background Color ➢ Headings ➢ Horizontal Lines	Skill Development	Practical		2

4	**Lists Tag**	General	Theory	1	-
	➢ Numbered (Ordered) Lists ➢ Bulleted (Unordered) Lists ➢ Definition Lists, Nested Lists	Skill Development	Practical	-	2
5	**Links & Images Tags**	General	Theory	1	
	➢ How to create Links ➢ Text Links ➢ Image Links ➢ Opening a Page in a New Window or Tab ➢ Linking to an Area on the Same Page (Bookmarks) ➢ Linking to an E-mail Address ➢ Linking to Other Types of Files. ➢ Introduction to Images for Web pages ➢ Adding Images to Web pages ➢ Resizing an Image ➢ Resizing an Image ➢ Alternative (ALT) Text	Skill Development	Practical		4
6	**Creating Tables**	General	Theory	1	
	➢ Inserting a Table ➢ Table Borders ➢ Table Headers ➢ Complex Table	Skill Development	Practical	-	2
7	**Creating Forms**	General	Theory	1	

	➢ About Forms ➢ Text Boxes ➢ Text Areas ➢ Check Boxes ➢ Menu Lists ➢ Radio Buttons ➢ The Submit Button ➢ The Reset Button	Skill Development	Practical	-	2
6	**Adding Audio and Video**				
	➢ About Video and Audio Files ➢ Adding Audio ➢ Adding Video ➢ Using YouTube to Display Video	Skill Development	Practical		2
9	**Cascading Style Sheets**	General	Theory	1	
	➢ CSS Syntax ➢ Inline CSS ➢ Internal CSS ➢ External CSS ➢ Creating an External CSS ➢ ID and Class	Skill Development	Practical		4
10	**Working With Text in CSS & Borders**	General	Theory	1	
	➢ Text Alignment & Color ➢ Fonts & Font Size ➢ Margin & Padding	Skill Development	Practical		4

	➢ How to create Text Border ➢ Types of Borders				
11	**Creating Backgrounds in CSS**	General	Theory	2	
	➢ How to Create Border ➢ Background Colors & Gradients ➢ Linear Gradient ➢ Radial Gradient ➢ Conical Gradient	Skill Development	Practical		4
12	**Adding a Navigation Bar in CSS**	General	Theory	1	
	➢ Colors & Images ➢ Image Opacity ➢ How to Create Navigation Bar ➢ Vertical Navigation Bar ➢ Horizontal Navigation Bar				3
13	**How to create Division of Page**	General	Theory	1	
	➢ Div Tag ➢ Padding ➢ Margin of Div Tag ➢ How to Create Login Page Using Div Tag	Skill Development	Practical		4
14	**Getting Acquainted with JavaScript &The Makeup of JavaScript**	General	Theory	2	

	➢ Introduction to JavaScript ➢ The <SCRIPT>…</SCRIPT> Tag ➢ JavaScript Statements ➢ External JavaScript ➢ What are JavaScript Variables? ➢ Creating (Declaring) Variables ➢ Local Variables and Global Variables ➢ Exploring JavaScript Data Types	Skill Development	Practical		10
15	**JavaScript Conditions, Loops**	General	Theory	2	
	➢ IF & Switch Conditions ➢ JavaScript Loops ➢ For Loop ➢ While Loop ➢ Do while Loop ➢ Break & Continue	Skill Development	Practical		6
16	**JavaScript Operators & Functions**			1	
	➢ JavaScript Function Definition and Syntax ➢ JavaScript Operators				4

Suggested Readings:

1. Creating Web Pages For Dummies by Bud E. Smith,Arthur Bebak
2. Web Designing and Publishing by Prof. Satish Jain and M. Geetha Iyer
3. Mastering Html, Css & Javascript Web Publishing by Laura Lemay (Author), Rafe Colburn (Author), Jennifer Kyrnin

VOCATIONAL COURSE

ON

COMPUTER APPLICATION

(SEM 4)

Title of the Course	:	Computer Application
Duration	:	6 Months
Nodal Department of HE1 to run course	:	Christ Church College, Kanpur
Broad Area/Sector	:	Computer Application
Sub Sector	:	Artificial Intelligence and Internet of Things
Nature of the Course	:	Independent
Aligend NSQF Level	:	Foundation
Name of Proposed Skill Partner	:	UPTEC Computer Consultancy Ltd.
Job Prospectus	:	Data Analytics and Network Structure

UNIT	**TOPIC**	**GENERAL/SKILL DEVELOPMENT**	**THEORY/PRATICAL/INTERSHIP/TRAINING**	**NO. OF THEORY HOURS**	**NO. OF SKILLS HOURS**
UNIT 1	**INTRODUCTION TO INTELLIGENCE AND ARTIFICIAL INTELLIGENCE**				
	➢ Introduction ➢ Objectives	General	Theory	6	

	➢ Some Simple ➢ Definition of A.I. ➢ Definition by Eliane Rich ➢ Definition by Buchanin and Shortliffe ➢ Another Definition by Elaine Rich ➢ Summary				
UNIT 2	**INTELLIGENT AGENTS**				
	➢ Introduction ➢ Objectives ➢ Definitions Agents and Rationality ➢ Example: A boundary following robot ➢ Task Environment of Agents ➢ Rationality vs. Omniscience ➢ Autonomy and learning capability of the agent PEAS(Performance, Environment, Actuators, Sensors) Example An Automated Public Road Transport Driver Different Types of Task Environments ➢ Fully Observable vs. Partially Observable	General	Theory	15	

	Environment ➢ Static vs. Dynamic Environment ➢ Deterministic vs. Stochastic Environment ➢ Episodic vs. Sequential Environment ➢ Single agent vs. Multi-agent Environment ➢ Discrete vs. Continuous Environment Some Examples of Task Environments ➢ Crossword Puzzle ➢ Medical Diagnosis ➢ Playing Tic-tac-toe ➢ Playing Chess ➢ Automobile Driver Agent The Structure of Agents ➢ SR (Simple Reflex) Agents ➢ Model Based reflex Agents ➢ Goal-based Agents ➢ Utility-based Agents ➢ Learning Agents				
UNIT 3	**Sensors, Actuators and Microcontrollers**				

	INTRODUCTION **SENSORS** CLASSIFICATION OF SENSORS TYPES OF SENSORS ➢ Position ➢ Occupancy and motion ➢ Velocity and Acceleration ➢ Force ➢ Acoustic ➢ Humidity ➢ Light ➢ Radiation ➢ Temperature ➢ Chemical ➢ Image ➢ Optical ➢ Gas ➢ Ultrasonic ➢ Hall ➢ Infrared sensors(IR) ➢ Biosensors ➢ Micro and Nanosensors **ACTUATORS** CLASSIFICATION OF ACTUATORS ➢ Electrical Actuators ➢ Electromechanical Actuators ➢ Electromagnetic Actuators ➢ Hydraulic Actuators	General	Theory	8	

	➢ Pneumatic Actuators ➢ Smart Materials Actuators ➢ Microactuators				
UNIT 4	**IOT APPLICATIONS**				
	INTRODUCTION TO ARDUINO TYPES OF ARDUINO BOARDS Arduino Uno Arduino Leonardo Arduino 101	General	Theory	5	
UNIT 5	**ARDUINO IDE**	Skill Development	Practical		7
	➢ Features of Arduino IDE ➢ How to download and Install Arduino IDE? **PARTS OF ARDUINO IDE** ➢ Menu Bar ➢ Text Editor ➢ Output Pane **WRITING/EDITING CODE IN SKETCH** **COMPILING-DEBUGGING** **UPLOADING AND RUNNING FILE** **ROLE OF SERIAL MONITOR**				
UNIT 6	**LED PROGRAMMING**				
	➢ Arduino board ➢ Breadboard	General	Theory	3	

	➢ LED				
	OPEN YOUR FIRST SKETCH ➢ Void setup() ➢ Void loop() **VARIABLES** **INDENTIFIERS** **KEYWORDS** **BUILT-IN DATA TYPES** **VARIABLE SCOPE** **PREPROCESSOR DIRECTIVE** ➢ The =include directive ➢ The =define directive	Skill Development	Practical		5
UNIT 7	**BASIC PROGRAMMING CONCEPT**				
	OPERATORS ➢ Arithmetic Operators ➢ Relation and Logical Operation ➢ Assignment Operation ➢ Pointer Operation ➢ Bitwise Operation **CONDITIONAL STATEMENTS AND LOOPS** **DECISION MAKING USING RELATIONAL OPERATORS** ➢ The if statement ➢ The if-else statement	Skill Development	Practical		17

	➢ The condition operator(?:) ➢ Nested if-else Statement ➢ The switch statement **LOGICAL CONNECTIVES** **LOOPS** ➢ While loop ➢ do- while loop ➢ for loop ➢ nested loops ➢ infinite loops ➢ THE break STATEMENT ➢ THE continue STATEMENT				
UNIT 8	**PROJECT USING IOT**				
	➢ **Write a program sequential LED ON-OFF.** ➢ **Write a program to interface bottom and LED so that Led-blink glow one button is press.** ➢ **Write a program to interface keypad with arduino board and display the key press on serial monitor.** ➢ **Write a program to interface LED's on pin number 11, 12, and 13 and**	Skill Development	Practical		9

	blink alternatively at delay of 1 second. ➢ **Automatic Attendance and Classroom Environmental Monitoring** ➢ **Write a program to sense soil moisture using soil moisture sensor.** ➢ **Write a Program to sense water using water sensor.** ➢ **Write a program to interface buzzer with arduino board to buzz ON-OFF with the delay of 1 sec.**				
Total Hours=75				37	38

Recommended Books: -

1. Rich E. & Knight K. (1991). Artificial Intelligence. Tata McGraw-Hill Publishing Company Limited
2. IOT and Publishing by Prof. Satish Jain.
3. Russell S. & Norvig P, Artificial Intelligence: A Modern Approach (Second Edition), (Pearson Education, 2003).