ASIAN EDUCATIONAL INSTITUTE, PATIALA

(An Autonomous Body)

School of Computer Science

SCHEME OF EXAMINATION FOR POST-GRADUATE PROGRAMME

POST GRADUATE DIPLOMA IN COMPUTER APPLICATIONS (PGDCA)

(Programme Code PDCA1AS)

CHOICE BASED CREDIT SYSTEM (CBCS)

(SEMESTER 1st AND 2nd)

SESSION 2024 -2025

ORDINANCE FOR POST GRADUATE DIPLOMA IN COMPUTER APPLICATION

Applicability of Ordinances for the time being in force.

Notwithstanding the integrated nature of a course spread over more than one academic year, the Ordinances in force at the time a student joins a course shall hold good only for the examination held during or at the end of the academic year. Nothing in these Ordinances shall be deemed to debar the College from amending the ordinances subsequently and the amended ordinances, if any, shall apply to all the students whether old or new.

1. The examination for the Post Graduate Diploma in Computer Application shall be held in one part to be called PGDCA. It will consist of two semesters, viz. Semester 1st and 2nd. The examination shall be held in the months of November/December for 1st and April /May for 2nd semester or on such other dates as may be fixed by the Institute.
2. The PGDCA shall be open to any person who has passed an under graduate degree examination in any faculty from any university or any other examination recognised as equivalent thereto.
3. A candidate must complete and pass the whole course of one year within a maximum of two years from the date of admission in PGDCA First semester.
4. Semester examinations will be open to regular candidates who have been on the rolls of the college and meet the attendance and other requirements as prescribed in the ordinances of the course.
5. **Examination Rules**

   5.1 Paper Setting/Evaluation will be done by an External Examiner or as decided by the Examination Cell.

   5.2 The supplementary examination will be held along with the routine End Semester Tests. The supplementary paper would be from the syllabi prescribed for that session in which the candidate is appearing. The student can appear only in the theory paper on the payment of the required fee. The candidate will have consecutive two attempts to clear the Supplementary Examination. All reappear candidates of odd semester can appear in even semester and even semester can appear in odd semester. Marks of practical and internal assessment will be carry forward as original.

   5.3 Re-evaluation of answer sheets in two subjects is allowed after paying the requisite fee. The application for Re-evaluation should be submitted within **15 days** of the declaration of the results. In case there is a difference of more than **10 %** between the marking of the First evaluator and the Second evaluator, then the paper would be sent to a Third Evaluator. The mean of the marks of the Second and Third evaluators is then considered as the final marks. The re-evaluated marks will be considered final irrespective of the increase or decrease in marks.

   5.4 The students who have reappear in the 1st semester in one year Diploma course at the Postgraduate Level will be allowed to appear in their Reappear examination along with the Final Semester Examinations of their respective courses.

   5.5 The Principal can provide Golden Chance (with special chance fee) to students who have been unable to clear their exams even after two attempts.

   5.6 Viva-voce/Practical examination shall be conducted by a committee consisting of the following:-

1. One external experts
2. One internal examiner (to be nominated by the Principal of the College/Head of the Department OR his/her nominee).

The quorum of Committee meeting would comprise one external and one internal examiner.

6. **Grading System:**

The grades and their description, along with equivalent numerical grade points are listed in the Grading Assignment Table as follows:

Grade Assignment Table

Range of Marks	Description	Grade	GradePoint
91-100	Outstanding	O	10
81-90	Excellent	A+	9
71-80	Very Good	A	8
61-70	Good	B+	7
51-60	Above Average	B	6
41-50	Average	C	5
35-40	Pass/Fair	P	4
0-34	Fail	F	0
Otherwise	Absent/Detained	Ab/D	0

a. A student obtaining Grade F shall be considered failed and will be required to reappear in the examination.

b. For non credit courses **'Satisfactory' or 'Unsatisfactory'** shall be indicated instead of the letter grade and this will not be counted for the computation of SGPA/CGPA.

7. **Computation of SGPA and CGPA**

The UGC recommends the following procedure to compute the Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA):

a. The SGPA is the ratio of sum of the product of the number of credits with the grade points scored by a student in all the courses taken by a student and the sum of the number of credits of all the courses undergone by a student, i.e.

SGPA (Si)=∑(Earned Credits Ci x Grade Point Gi)/∑Earned Credits Ci;

Where Ci is the number of credits of the ith course and Gi is the Grade Point Scored by the student in the ith course.

b. The CGPA is also calculated in the same manner taking into account all the courses undergone by a student over all the semesters of a programme, i.e.

CGPA (Ci)=∑(Earned Credits Ci x SGPA Si)/∑Ci);

Where Si is the SGPA of the ith semesters and Ci is the total number of credits in that semester.

c. The SGPA and CGPA shall be rounded off to 2 decimal points and reported in the transcripts.

Illustration of the computation of SGPA and CGPA and Format for Transcripts

i. **Computation of SGPA and CGPA**

Illustration for SGPA

Course	Credits	Grade Letter	Grade Point	Credit Point (Credit x Grade)
Course1	3	A	8	3X8= 24
Course2	4	B+	7	4X7= 28
Course3	3	B	6	3X6= 18
Course4	3	O	10	3X10=30
Course5	3	C	5	3X5= 15
Course6	4	B	6	4X6= 24
	20			139

Thus, **SGPA=139/20=6.95**

Illustration for CGPA

Semester1	Semester2	Semester3	Semester4
Credit:20 SGPA:6.9	Credit:22 SGPA:7.8	Credit:25 SGPA:5.6	Credit:26 SGPA:60
Semester5	**Semester6**		
Credit:26 SGPA:6.3	Credit:25 SGPA:8.0		

Thus, **CGPA**= $\frac{20 \times 6.9+22\times 7.8+25\times 5.6+26\times 6.0+26\times 6.3+25\times 8.0}{144}$ = 6.73

ii. **Transcripts (Format):**

Based on the above recommendations on Letter grades, grade points, SGPA and CGPA, the College may issue the transcript for each semester and a consolidated transcript indicating the performance in all semesters.

8. **Division and Position:**

Division shall be awarded in the following manner, to the candidates on the basis of their respective CGPA:

CGPA7.5ormore	1st Division with Distinction
CGPA6.0ormorebutlessthan7.5	1st Division
CGPA5.0ormorebutlessthan6.0	2nd Division
CGPA3.5ormorebutlessthan5.0	3rd Division
Otherwise	Fail

However, First, Second or Third position shall be awarded to the candidates, provided they meet the following conditions:

a) Rank shall be solely decided on the final CGPA, on completion of degree credit requirement.
b) The candidate has completed all the prescribed requirements, in the prescribed programme duration.
c) The candidate has passed/secured valid grades in all the prescribed courses, in the first attempt.
d) No disciplinary action is pending or has ever been lodged against him/her.

e) In case of an exceptional tie, both candidates shall be awarded the same rank.

9. **Grade Card:**

At the end of each semester, a student will be given a 'Grade Card' which will contain Course Code, Title, Credits, Grades Awarded, Earned Credits and Earned Point secured by him/her in each course, together with his/her SGPA in that semester. On the completion of the programme, a Final Grade Card will be issued to the student, giving full semester-wise details about the absolute marks and grades obtained by him/her in each course together with his/her SGPA and also the CGPA and Division awarded to him/her.

10 **Equivalence:**

Percentage (P) equivalent to CGPA earned by a candidate may be calculated using the following formula:

P=10XCGPA

11 **MALPRACTICES/UNFAIR MEANS**

The following shall be deemed to be unfair means:

I. Leaving the Examination Hall without submitting the answer book to the invigilator or taking away, tearing off or otherwise disposing off the same or any part thereof.
II. Using abusive language in the examination hall or writing the same in the answer sheet.
III. Making an appeal to the evaluator through answer sheet.
IV. Possession by examinee or having access to books, notes, papers, mobile or any other electronic material which can prove to be helpful in the exam.
V. Any action on the part of candidate at an examination trying to get undue advantage in the performance at examinations or trying to help another, or derive the same.
VI. Impersonating for a candidate in the examination.
VII. Intimidating, threatening, manhandling, using violence, show of force in any form against any invigilator or any person on duty, creating disturbance to the smooth conduct of the examination.
VIII. Any other action which the Controller Examination/Chief Controller deem fit to be a case of UMC.

In case the student is found to have used any of the above Unfair means:

I. His/her answer book shall be seized and He/She will be given a new answer sheet.
II. Invigilator shall submit a detailed report along with the answer book of the student and the related material, if any, to the Centre Superintendent who will subsequently hand it over to Controller Examination.
III. Written statement to this effect shall be obtained from the student by the Centre Superintendent. In case the student refuses to do the same, the fact of refusal must be recorded.
IV. The student reported to have used unfair means shall be allowed to appear in the subsequent papers. However, no marks would be awarded for the paper in which unfair means were used.

V. The Principal shall refer the cases of malpractices in Mid Semester tests, House Tests and End Semester Examinations, to an Unfair Means Committee, constituted by him/her for the purpose. Such committee shall follow the approved scales of punishment. The Principal shall take necessary action, against the erring students based on the recommendations of the committee.

The involvement of the Staff, who are in charge of conducting examinations, evaluating examination papers and preparing/keeping records of documents relating to the examinations if involved in such acts (inclusive of providing incorrect or misleading information) that infringe upon the course of natural justice to one and all concerned at the examination shall be viewed seriously and recommended for award of appropriate punishment after enquiry.

12 Attendance Regulations & Condonation:

A student shall be eligible to appear for end semester examinations, if he/she acquires a minimum of **75%** of attendance in each subject.

Request to the Principal for Condonation of shortage of attendance after the recommendation of the HOD will be forwarded to Lecture Shortage Condonation Committee. The committee can finally condone the shortage in aggregate up to **15%** on medical grounds in each semester.

Any student representing the Institute/ University/ State/ Nation in any Academic/ Sports/ Cultural/ExtraCo curricular/NSS/NCC or any other event shall be considered on duty. His/ Her shortage of lectures shall be condoned, provided that the student is permitted in writing by the Principal/HOD concerned and a certificate to this effect signed by the competent authority where the student attended the event is taken.

A Student will not be promoted to the next semester unless he/she satisfies the attendance requirement of the present semester as applicable.

Students whose shortage of attendance is not condoned in any semester are not eligible to take their end semester examination of that particular semester and their registration for examination shall stand cancelled and no fee shall be refunded.

13. Late college students: A candidate, who has completed the prescribed course of instructions for a semester but has not appeared in the examination or having appeared, has failed in the examination, may appear as a late college student within the prescribed period.

14. Applications for admission to the examination shall be made on the prescribed form attested by the competent authority as per the college rules.

15. Amount of examination fee to be paid by a candidate for each semester shall be as fixed by the College from time to time.

16. The last date by which examination forms and fees must reach the Registrar shall be as follows.

Semester	Without late fee	With late fee of Rs. 800/-	With late fee of Rs.1200 /-	With late fee of Rs.5000/-	With late Fee of Rs. 10,000
Nov./Dec.(Odd)	Sept.30	Oct.15	Oct. 21	Oct. 31	Nov.10*
April/May(Even)	Feb.28	March15	March21	March31	April15*

***Note: No Examination Form will be accepted after the prescribed date.**

17. The syllabus for the session shall be such as prescribed by the institute from time to time.

18. The minimum number of marks required to pass each semester examination will be 35% in each paper and 35% in the aggregate of semester examination. Provided, that in papers with practical, the percentage shall be required separately in written and practical/lab work.

19. The lab file shall be evaluated jointly by the external and internal examiners.

20. The medium of instruction and examination shall be English.

21. Assessment:

PGDCA course is Credit Based Semester System (CBSS) as described in the Introduction. The assessment in all semesters of PGDCA Part- I &Part-II will be **30%** internal and **70%** external for each paper. The result for the internal examinations shall be conveyed to the students/Examination Branch by the Head of the Department as per approved schedule.

There shall be Two Mid Semester tests in each Semester.

InternalAssessmentof**30%**willbebasedonContinuousComprehensiveAssessment(CCA) pattern and the breakup of **30%** will be as under:

(i)	Average of Two mid Semester Tests	:	**40%**
(ii)	Assignment/Seminar/Class Test/Tutorial/Quiz etc.	:	**40%**
(iii)	Attendance	:	**20%**

Papers having practical/viva, the marks of theory and practical/viva will be reduced equally percentage wise to make room for **30%** internal assessment.

Note: If a case comes to notice of Controller of Examinations where the marks awarded by the Teacher are on a very Higher/Lower side, the award will be got moderated by the following committee.

I. Paper Evaluator
II. Principal/Head of the Department concerned.
III. Controller of Examination

A candidate is required to secure at least **35%**marks both in external examination (Theory and Practical/ Project work) and in internal assessment separately in each paper in order to qualify in an examination.

In case the student is dissatisfied with the marks awarded to him/her in internal assessment; he/she can approach the concerned teacher. If the student is still not satisfied, he/she may approach the head of department and the principal subsequently.

22. **End-Semester Examination:**

End-semester examination(s) of each theory course shall be of three hours duration and will be conducted as per norms and schedule notified by the Controller of Examination. The end semester examinations of laboratory/practical courses and other courses such as seminar, colloquium, field work, project, dissertation etc. shall be conducted as notified by the HOD.

23. **Diploma Requirement:**

The result of all the examinations will be declared through the College website.

The grace marks shall be allowed according to the general ordinances relating to 'Award of Grace Marks'. These ordinances will apply to all examinations.

(i) Grace marks to be given shall be calculated on the basis of **1%** of total aggregate marks of all the written and practical papers of the examination concerned. Marks for viva-voce/internalassessment/sessionalwork/skillinteaching/anyadditional /optional subject shall not be taken into account for this purpose. If a fraction works out to half or more, it shall count as one mark and fractional less than half shall be ignored

(ii) To pass in one or more written papers or subjects, and/or to make up the aggregate to pass the examination but not in practical, sessional work, internal assessment, viva-voce and skill in teaching.

The College may revise, amend and change the regulations or the curriculum from time to time, if formed necessary.

A student, who earns total specified credits according to the curriculum and fulfills such other conditions as may be mentioned in the curriculum of the programme, shall be issued the DMC-cum-Diploma Certificate by the Punjabi University Patiala. He/she must also pay all College dues as per rules. Moreover, there should be no case of indiscipline pending against him/her.

24. If any student gets admission after concealing any fact or his/her certificates are found fake after verification or he/she misleads the institution as any front or because of any other reason, his/her admission will stand cancelled/ his/her result cancelled though he/she may have been declared pass.

25. In case the ordinance is silent about any issue, it will be decided by the College Principal in consultation with the Academic Advisory Committee of the college in the anticipation of approval of the same by Academic Council of the College.

PROGRAM OUTCOMES (POs)

1. Computational Knowledge: Apply knowledge of computing fundamentals, computing specialisation, mathematics, and domain knowledge appropriate for the computing problems and requirements.

2. Design /Development of Solutions: Design and evaluate solutions for computing problems, and design and evaluate systems, components, or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.

3. Modern Tool Usage: Select, adapt and apply appropriate techniques, resources, and modern computing tools to computing activities, with an understanding of the limitations.

4. Professional Ethics: Understand and commit to professional ethics and cyber regulations, responsibilities, and norms of professional computing practices.

5. Life-long Learning: Recognize the need, and have the ability, to engage in independent learning for continual development as a computing professional.

6. Communication Efficacy: Communicate effectively with the computing community, and with society at large, about computing activities by being able to comprehend and write effective reports, design documentation, make effective presentations, and give and understand clear instructions.

7. Societal and Environmental Concern: Understand and assess societal, environmental, health, safety, legal, and cultural issues within local and global contexts, and the consequential responsibilities relevant to professional computing practices.

8. Individual and Team Work: Function effectively as an individual and as a member or leader in diverse teams and in multidisciplinary environments

SYLLABI, OULINES OF PAPERS AND TESTS

PGDCA Semester - I

(Session 2024-25)

Code No.	Title of the Paper	Credit	Hours per week	Ext. Exam. Marks	Int. Ass. Marks	Max Marks	Time Total Allowed
PDCA1101T	Introduction to Information Technology and E-Commerce	4	4	70	30	100	3 Hrs
PDCA1102T	Problem Solving Using Computers	4	4	70	30	100	3 Hrs
PDCA1103T	Web Technology	4	4	70	30	100	3 Hrs
PDCA1104L	Programming Lab-I (Based on PDCA1101T)	4	8	70	30	100	3 Hrs
PDCA1105L	Programming Lab-II (Based on PDCA1102T)	4	8	70	30	100	3 Hrs
	Total	20		350	150	500	

PGDCA Semester - II

(Session 2024-25)

Code No.	Title of the Paper	Credit	Hours per week	Ext. Exam. Marks	Int. Ass. Marks	Max Marks	Time Total Allowed
PDCA1201T	Desktop Publishing	4	4	70	30	100	3 Hrs
PDCA1202T	Programming with Python	4	4	70	30	100	3 Hrs
PDCA1203T	Artificial Intelligence	4	4	70	30	100	3 Hrs
PDCA1204L	Programming Lab-III (Based on PDCA1201T)	4	8	70	30	100	3 Hrs
PDCA1205L	Programming Lab-IV (Based on PDCA1202T)	4	8	70	30	100	3 Hrs
	Total	20		350	150	500	

CONTINUOUS ASSESSMENT (THEORY PAPERS)

1.	Two tests will be conducted during the Semester. One best test will be considered for assessment.	:	60% of the marks allotted for Continuous Assessment
2.	Assessment/Quizes	:	20% of the marks allotted for Continuous Assessment
3.	Attendance	:	10% of the marks allotted for Continuous Assessment.
4.	Class Participation and behavior	:	10% of the marks allotted for Continuous Assessment.

PDCA1101T: INTRODUCTION TO INFORMATION TECHNOLOGY AND E-COMMERCE

Total Marks: 100
External Examination: 70
Internal Assessment: 30

Maximum Time: 3 Hrs.
Minimum Pass Marks: 40%
Lectures to be delivered: 45-55 Hrs.

A) Instructions for paper-setter

The question paper will consist of three sections A, B & C. Sections A & B will have four questions from the respective sections of the syllabus and will carry 30% marks each. Section C will have 6-12 short answer type questions which will cover the entire syllabus uniformly and will carry 40% marks in all.

B) Instructions for candidates

1. Candidates are required to attempt two questions each from sections A & B of the question paper and the entire section C.
2. Use of non-programmable scientific calculator is allowed.

COURSE OUTCOMES:

On the successful completion of the course, students will be able to:

- Have a clear understanding of fundamentals of computers so as to apply it in real life problems.
- Know basic of computer and its evolution.
- Understand Applications of Computers.
- Develop skills to get employment in I.T. field

SECTION-A

Computer Fundamentals: Block structure of a computer, characteristics of computers, problem solving with computer, Classification of Computers on the basis of capacity, purpose and generations.

Input and Output Units: Functional Characteristics of Graphical I/O devices: Mouse, Joy tick, Touch Screen, Light Pen, Optical Recognition devices – MICR, OMR, OBR, OCR. Printers: Impact and Non Impact Printers.

Memory Types: Magnetic core, RAM, ROM, Cache memory, Secondary.

Overview of Storage Devices – Magnetic tape, Floppy Disk, Hard Disk, Optical Storage.

Computer Languages and Software: Types of Software- System Software, Application Software, Firmware. Computer Languages: Machine language, assembly language, high level language, 4GL, Compiler, Interpreter and Assembler.

SECTION-B

Computer Codes: weighted and non-weighted code, BCD, EBCDIC, ASCII, Unicode.

Computer Network and Data Communication: Network types, Network topologies, Transmission modes.

Internet Concepts: Evolution of Internet, World Wide Web, Uniform Resource Locator, Web Browsers, FTP, Hyperlink, HTTP, Video Conferencing, GPS, 3G, 4G, Wi-Fi, Bluetooth, Cloud Technology.

E-Commerce: The Scope of E-Commerce, Electronic Market, Electronic Data Interchange, Internet Commerce, Benefits and Limitations of E-Commerce, Produce a generic framework for E-Commerce, Architectural framework of E-Commerce. Web based E-Commerce Architecture.

Text/Reference Books:

1. Peter Nortorn, Introduction to Computers, SeventhEdition
2. V. Rajaraman, Fundamentals of Computers, PHI.
3. Larry E. Long and Nancy Long, Computers: Information Technology in Perspective, PHI.
4. N. Subramanian, Introduction to Computers, Tata McGraw-Hill.
5. D.H. Sanders, Computers Today, McGraw- Hill.

PDCA1102T: PROBLEM SOLVING USING COMPUTERS

Total Marks: 100
External Examination: 70
Internal Assessment: 30

Maximum Time: 3 Hrs.
Minimum Pass Marks: 40%
Lectures to be delivered: 45-55 Hrs.

A) Instructions for paper-setter

The question paper will consist of three sections A, B & C. Sections A & B will have four questions from the respective sections of the syllabus and will carry 30% marks each. Section C will have 6-12 short answer type questions which will cover the entire syllabus uniformly and will carry 40% marks in all.

B) Instructions for candidates

1. Candidates are required to attempt two questions each from sections A & B of the question paper and the entire section C.
2. Use of non-programmable scientific calculator is allowed.

COURSE OUTCOMES:

The course provides students with a detailed study of programming techniques using C programming language. They will be able:

- To develop good programming habits, proper logical thinking, algorithm and flowchart development.
- To analyze problems efficiently and develop comprehensive logic to solve it.
- To develop good algorithms and flowcharts to solve problems.
- To write C programs in a structured manner.
- To write efficient programs.

SECTION A

Problem solving process/Logic development: Problem definition, Algorithm development, Flowchart, Pseudo code, Coding, Compilation and debugging.
Basic structure of C program: History of C, Structure of a C program, Character set, Identifiers and keywords, constants, variables, data types.
Operators and expressions: Arithmetic, Unary, Logical, Relational operators, assignment operators, Conditional operators, Hierarchy of operations type conversion.
Control statements: branching statements (if, if else, switch), loop statements (for, while and do-while), jump statements (break, continue, goto), nested control structures.

Functions: Library functions and user defined functions, prototype, definition and call, formal and actual arguments, local and global variables, methods of parameter passing to functions, recursion.

I/O functions: formatted & unformatted console I/O function.

SECTION B

Storage Classes: automatic, external, static and register variables.

Arrays: – One dimensional and two-dimensional arrays, Declaration, initialization, reading values into an array, displaying array contents

Strings: input/output of strings, string handling functions (strlen, strcpy, strcmp, strcat&strrev), table of strings.

Structures and unions: using structures and unions, comparison of structure with arrays and union.

Pointers: pointer data type, pointer declaration, initialization, accessing values using pointers, pointers and arrays.

Introduction to Files in C: opening and closing files. Basic I/O operation on files.

Text/Reference Books:

1. E. Balagurusamy, Programming in C, Tata McGraw-Hill.
2. Kernighan and Ritchie, The C Programming Language, PHI.
3. Byron Gotfried, Programming in C.
4. Kamathane, Programming in C, Oxford University Press.

PDCA1103T: WEB TECHNOLOGY

Total Marks: 100
External Examination: 70
Internal Assessment: 30

Maximum Time: 3 Hrs.
Minimum Pass Marks: 40%
Lectures to be delivered: 45-55 Hrs.

A) Instructions for paper-setter

The question paper will consist of three sections A, B & C. Sections A & B will have four questions from the respective sections of the syllabus and will carry 30% marks each. Section C will have 6-12 short answer type questions which will cover the entire syllabus uniformly and will carry 40% marks in all.

B) Instructions for candidates

1. Candidates are required to attempt two questions each from sections A & B of the question paper and the entire section C.
2. Use of non-programmable scientific calculator is allowed.

COURSE OUTCOMES:

This course is designed to explore the features of web technology and its significance in developing web-based applications. Students will be able to learn and understand the concepts of web programming. On completion of this course, the students will be able to:

- Understand the basics of HTML for creation of web pages
- Create forms for interactive applications
- Integrate HTML and CSS
- Understand the design of applets

SECTION-A

Internet Basics: Networks, Protocols, TCP/IP, Internet Addresses, Ports, Sockets, Name Resolution, Firewalls, Protocol Tunnelling, Proxy Servers, Internet Standards, MIME, Overview of clients/servers web communication, comparison of web servers, Common Gateway Interface CGI.

World Wide Web (WWW): World Wide Web and its evolution, web page, web server, HTTP/HTTPS protocol. Examples of web servers. Navigation Tools: Mozilla Firefox, Google Chrome, Internet Explorer, Uniform Resource Locator (URL).Hypertext, hyperlinks and hypermedia, URL, its registration, browsers, search engines, proxy servers.

Developing Web Portals Using HTML: Basic structure of HTML, Formatting text, title, headings, Horizontal rules and comments, Inserting links and images,Creating tables, Creating forms and frames.

SECTION-B

PHP: Introduction, syntax, variables, statements, operators, decision making, loops, arrays, strings, forms, get and post methods, functions, Introduction to cookies, storage of cookies at client side, Using information of cookies, Creating single or multiple server side sessions, Timeout in sessions, Event management in PHP, introduction to content management systems based on PHP

PHP and MySQL: Introduction to MySQL, connecting to MySQL database, creation, insertion, deletion and retrieval of MySQL data using PHP, Introduction of new databases.

Text/Reference Books:

1. Jeffrey C Jackson, "Web Technology — A computer Science perspective", Pearson Education, 2007.
2. Chris Bates, "Web Programming — Building Internet Applications, "Wiley India, 2006.
3. Xavier, C, " Web Technology and Design" , New Age International
4. Ivan Bayross," HTML. DHTML, Java Script. Perl & CGI", BPB Publication.
5. Ramesh Bangia, "internet and Web Design" , New Age International
6. Bhave, "Programming with Java", Pearson Education
7. Ullman, "PHP for the Web: Visual QuickStart Guide", Pearson Education
8. Deitel, "Java for programmers", Pearson Education
9. Dustin R. Callaway, "Inside Servlets" Pearson Education.

PDCA1104L: PROGRAMMING LAB-I (OPERATING SYSTEM AND OFFICE AUTOMATION)

Total Marks: 100
External Examination: 70
Internal Assessment: 30

Maximum Time: 3 Hrs.
Minimum Pass Marks: 40%
Practical Sessions: 45-55 Hrs.

This laboratory course will comprise the following list of practical based on any GUI Based Operating System (Unix/Windows/Mac) and concepts of Office Automation:

Operating System

Activity 1: Operating System Installation and Software & Drivers installation.
Activity 2: Basic components of GUI-Desktop, Icons, Taskbar, Status Bar, Wallpapers, Screen Saver
Activity 3: Start Menu: Accessories- Notepad, Calculator, Clock, Date and Time, Disk Defragmentation, Working with Control Panel/Settings.
Activity 4: Taskbar properties - Maximize Minimize, Restore, and Close.
Activity 5: Creating Files, Folders, Shortcuts, Moving folders (right click options)

Word

Activity 1:

i. Create, open, save and close a document.
ii. Typing, copying, moving and deleting data in word document.
iii. Perform Save and Save as, Cut and Copy, Paste and Paste Special.

Activity 2:

Formatting of data in word Document: -

i. Text formatting (font size, font style, font color, subscript, superscript, upper/lower case etc.)
ii. Text Alignment and character spacing
iii. Indention and line spacing
iv. Border and shading
v. Bullets and Numbering

Activity 3:

i. Find and replace and data sorting in a document.
ii. Protect your document.
iii. Add chart in word document. Create different types of Charts in word.
iv. Set a size, margin, orientation of page, Hyphenation, Columns and Line Numbers in Word.

Activity 4:

i. Set Page Color, Page Border, Themes, and Watermarks in Word
ii. Adding Tables, header/footers, pictures, page numbers and special symbols, Text Box in your word document.

iii. Showing Ruler, Gridlines, Document Map, Thumbnails, Inserting Word Art, Drop Cap, Hyperlink, Equation etc. in word document

Activity 5:

i. Arranging, splitting windows in word
ii. Perform Mail-merge in word
iii. Create and run Macros in Word
iv. Set the print properties of a word document

Excel

Activity 1:

i. Create, open, save and close workbook?
ii. Create a new worksheet, renaming and moving sheet.
iii. Entering, copying, moving and deleting data in cells and worksheets.
iv. Insert and delete cells, columns and rows in Excel.

Activity 2:

i. Formatting of data in cells.
ii. Text formatting (font size, font style, font color, Cell border etc.)
iii. Text Alignment
iv. Text Orientation, Text Direction, Text Control.

Activity 3:

i. Find and replace data in a sheet
ii. Perform data sorting and data filtering in Excel
iii. Protect your Worksheet and Workbook?
iv. Enter and perform some basic formulas in excel.

Activity 4:

i. Perform some basic Functions in Excel.
ii. Create a chart in Excel.
iii. Create different types of Charts in excel.
iv. Set a size, margin, orientation of page in Excel.
v. The print properties of a worksheet in Excel.

Activity 5:

i. Hide and unhide row and column inExcel.
ii. Set column width and row height in Excel.
iii. Adding text Box, header/footers, pictures and special symbols in your worksheet.
iv. Arranging, splitting and hiding windows in Excel. And also freezing panes.
v. Create and run Macros in Excel.

PowerPoint

Activity 1:

i. Create, open, save and close a Presentation
ii. Typing, copying, moving and deleting data in presentation.
iii. New Slide, understanding Slide Layout, adding and deleting slides.

Activity 2:

Formatting of data in slides: -

i. Text formatting (font size, font style, font color, subscript, superscript, upper/lower case etc.)
ii. Text Alignment and character spacing
iii. Indention and line spacing
iv. Border and shading
v. Bullets and Numbering

Activity 3:

i. Set a size, margin, orientation of slides in PowerPoint.
ii. Adding Tables, header/footers, pictures, page numbers and special symbols, Text Box etc. in your presentation

Activity 4:

i. Adding Animation and Transition Effects in Slides, Understanding Slide Show
ii. Presentation Views, Understanding Formatting commands in PowerPoint

Activity 5:

i. Create and run Macros in PowerPoint
ii. Arranging, splitting windows in PowerPoint.

The breakup of marks for the practical will be as under

i. Internal Assessment	**30 Marks**
ii. Viva Voce (External Evaluation)	**30 Marks**
iii. Lab Record, Program Development and Execution(External Evaluation)	**40 Marks**

PDCA1105L: PROGRAMMING LAB-II

Maximum Marks: 100*
Minimum Pass Marks: 40%

Max. Time: 3 Hrs
Practical sessions to be conducted: 60-70

This laboratory course will mainly comprise of exercise based on subject PDCA1102T (Problem Solving using Computers)

*Maximum Marks for Continuous Assessment: 30

Maximum Marks for University Examination: 70

PDCA1201T: DESKTOP PUBLISHING

Total Marks: 100
External Examination: 70
Internal Assessment: 30

Maximum Time: 3 Hrs.
Minimum Pass Marks: 40%
Lectures to be delivered: 45-55 Hrs.

A) Instructions for paper-setter

The question paper will consist of three sections A, B & C. Sections A & B will have four questions from the respective sections of the syllabus and will carry 30% marks each. Section C will have 6-12 short answer type questions which will cover the entire syllabus uniformly and will carry 40% marks in all.

B) Instructions for candidates

1. Candidates are required to attempt two questions each from sections A & B of the question paper and the entire section C.
2. Use of non-programmable scientific calculator is allowed.

COURSE OUTCOMES:

- This course will enable the students to familiarize with the features and use of application packages such as Adobe Photoshop, Corel Draw or any other equivalent latest package(s).
- They will develop skills in handling the software. Adobe Photoshop will help the students in understanding technical aspects of multimedia content creation, the processes and tools used for designing multimedia systems.
- This will make the students proficient in designing and developing a multimedia application.

SECTION-A

Introduction: Overview of Desktop Publishing (DTP)
Photoshop and Animation Technology: Photo-shop workshop, image editing tools, specifying and adjusting colors, using gradient tools, selection and move tools, transforming path drawing and editing tools, using channels, layers, filters and actions
Animation Technology: Definition, History of Animation, Types of animation- 2D and 3D, Basic principles ofanimation, Various Terms-Animation Drawings/Cels, Rough Drawings, Clean ups, Color reference drawings, Layout, Model Sheet, Key Drawings and in Between, Master Background, Concept Piece, Character drawing, Story Board.

SECTION-B

Corel Draw/Inkscape: Introduction, exploring Corel Draw screen, using dialog boxes, using roll ups,create/open file, save file, import/export files, print file, Use of ribbon bar, use of tool

box, select object, shaping objects using zoom tool, filling objects, outline objects, use of line tool.

Setting up new drawing, setting multi-page document, undo/redo mistakes, repeat, cut, copy, paste, delete, duplicate, clone. Insert object, paste special, copy attributes from select all, drawing objects,selecting objects.

Page setup, insert/delete page, use of layers, roll up, grid and scale set up,guideline set up

Formatting objects: Arranging objects: align, order, group, ungroup, combine, break apart, weld, intersection, trim, separate,Mode edit: to line, to curve, stretch, rotate, align, convert to curves

Creating special effects: Transform roll up, clear transformation, add perspective,envelope roll up, blend roll-up, extrude roll up, counter roll up, power line,power-clip clear effects

Working with text: Character, paragraph text, frame, setting of tabs, indents,bullets, spacing in paragraph text

Text/Reference Books:

1. Learning Desktop Publishing by Ramesh Bangia; Khanna Book Publishing Co. Pvt.Ltd., New Delhi
2. Desktop Publishing from A to Z by Bill Grout and Osborne; McGraw Hill
3. DTP (Desktop Publishing) for PC user by Houghton; Galgotia Publishing House Pvt.Ltd., Daryaganj, New Delhi.

PGDC1202T: PROGRAMMING WITH PYTHON

Total Marks: 100
External Examination: 70
Internal Assessment: 30

Maximum Time: 3 Hrs.
Minimum Pass Marks: 40%
Lectures to be delivered: 45-55 Hrs.

A) Instructions for paper-setter

The question paper will consist of three sections A, B & C. Sections A & B will have four questions from the respective sections of the syllabus and will carry 30% marks each. Section C will have 6-12 short answer type questions which will cover the entire syllabus uniformly and will carry 40% marks in all.

B) Instructions for candidates

1. Candidates are required to attempt two questions each from sections A & B of the question paper and the entire section C.
2. Use of non-programmable scientific calculator is allowed.

COURSE OUTCOMES:

This course is designed to explore computing and to show students the art of computer programming. Students will be able to learn and understand programming using python concepts for writing good programs. On completion of this course, the students will be able to Understand

- Basics of Python programming language
- Use different data types and control structures
- Explore the use of Python functions
- Create programs to access files in Python

SECTION A

Introduction to Python: History of Python, Strength and Weakness, Different Versions, Installing Python , Setting up in local environment, IDLE, Executing from file, command line from interactive mode, Python Identifiers and reserved keywords.

Python syntax: Variables and Variables type, Data types, Data Types Conversion, Operators (Arithmetic, Comparison, Assignment, Bitwise, Logical, Membership, Identity), Operators Precedence, Python Decision making (if, el if, else, nested if), Python loops (while, for, nested loops), Break and continue statements.

Python Collections or Sequence: Sequence introduction, Number operations, String Operations, List, Tuple, Dictionary, Set.

Python Functions: Function introduction, User defined functions, Functions with parameters, Keywords and optional parameters, Scope of variables (Global and Local), Anonymous function — Lambda, In-build function, List comprehension.

SECTION B

Python Modules: Modules, Standard Modules (Sys, Math, Time), Import Statement, from statement, Dir() functions. Python File handling: Sending Output to STDOUT Using the print() Method, Reading Input with the input() Method, Creating File Objects with the open() Method, Controlling File Access Modes, Working with File Object Attributes, Closing File Objects with the close() Method, Reading and Writing to File Objects with read() and write(), Using File Processing Functions from the OS Module.

Text/Reference Books:

1. Paul Gries, Jennifer Campbell, Jason Monto)o, Practical Programming- An Introduction to Computer Science Using Python 3.6, Shroff Publications and Distributors
2. John V Guttag, Introduction to Computation and Programming Using Python", Revised and expanded Edition, MIT Press , 2013
3. Robert Sedgewick, Kevin Wayne, Robert Dondero, —Introduction to Programming in Python: An Inter- disciplinary Approach, Pearson India Education Services Pvt. Ltd., 2016.
4. Timothy A. Budd, Exploring Python, Mc-Graw Hill Education (India) Private Ltd., 2015.
5. Paul Gries, Jennifer Campbell and Jason Montojo, Practical Programming: An Introduction to Computer Science using Python 3, Second edition, Pragmatic Programmers, LLC, 20 13.
6. Rossum, Introduction To Python ,Shroff Publications and Distributors
7. Downey,Think Python 2/ED, Shroff Publications and Distributors
8. Lutz, Learning Python, 5/ED, Shroff Publications and Distributors
9. Campbell ,Practical Programming: An Introduction to Computer Science Using Python, Shroff Publications and Distributors

PDCA1203T: ARTIFICIAL INTELLIGENCE

Total Marks: 100
External Examination: 70
Internal Assessment: 30

Maximum Time: 3 Hrs.
Minimum Pass Marks: 40%
Lectures to be delivered: 45-55 Hrs.

A) Instructions for paper-setter

The question paper will consist of three sections A, B & C. Sections A & B will have four questions from the respective sections of the syllabus and will carry 30% marks each. Section C will have 6-12 short answer type questions which will cover the entire syllabus uniformly and will carry 40% marks in all.

B) Instructions for candidates

1. Candidates are required to attempt two questions each from sections A & B of the question paper and the entire section C.
2. Use of non-programmable scientific calculator is allowed.

COURSE OUTCOMES:

This course is designed to familiarize the students with the emerging concept AI and its applications in various fields. On completion of this course, the students will be able

- To identify problems where artificial intelligence techniques are applicable.
- To apply selected basic AI techniques.
- To judge applicability of more advanced techniques.
- To participate in the design of systems that act intelligently and learn from experience.

SECTION A

Introduction to AI: Definition, Basic Elements of AI and AI application Areas.

Logic Development: Introduction to Propositional Logic: Syntax, Semantics, Inference methods in Propositional Logic. Introduction to Predicate Logic: Syntax, Semantics of Predicate Logic, Clausal form, Resolution, Unification, Inference Mechanisms.

Knowledge Based Systems: Meaning of Knowledge, Types of Knowledge, Components of Knowledge Base System, Knowledge Representation : Approaches to Knowledge representation, Issues in Knowledge representation, Knowledge representation using rules. Semantic Nets, Frames, Conceptual Dependencies, Scripts, CYC.

SECTION B

Knowledge Acquisition: Definition, General Learning Model, Types of Learning, Factors affecting Learning. Knowledge organization & Manipulation: Introduction, Issues in organization and manipulation.

Dealing with uncertainty: Symbolic reasoning under uncertainty-Introduction and logics for Non-monotonic reasoning, Implementation issues.

Expert systems : Basic Components & architecture of Expert systems, representing and using domain knowledge.

Applications of AI: Natural Language Processing, Machine learning, Robotics. Applications of AI in Business, Healthcare, Education and Finance.

Text/Reference Books:

1. E. Rich and K. Knight, "Artificial Intelligence", Tata McGraw Hill.
2. E. Charnaik and D. McDermott, "Introduction to Atificial Intelligence", Addison-Welsley Publishing Company.
3. Dan W. Patterson, "Introduction to Artificial Intelligence and Expert Systems", PHI.
4. W.F. Clofisin and C.S. Melifish, "Programming n PROLOG", Narosa Publishing Co.
5. Sanjiva Nath, "Turbo PROLOG", Galgotia Publications Pvt. Ltd.

PDCA1204L: PROGRAMMING LAB-III

Maximum Marks: 100*
Minimum Pass Marks: 40%

Max. Time: 3 Hrs
Practical sessions to be conducted: 60-70

This laboratory course will mainly comprise of exercise based on subject PDCA1201T (Desktop Publishing)

*Maximum Marks for Continuous Assessment: 30

Maximum Marks for University Examination: 70

PDCA1205L: Programming Lab-IV

Maximum Marks: 100*
Minimum Pass Marks: 40%

Max. Time: 3 Hrs.
Practical sessions to be conducted: 60-70

This laboratory course will mainly comprise of exercise based on subject PDCA1202T (Programming with Python)

*Maximum Marks for Continuous Assessment: 30

Maximum Marks for University Examination: 70