PANDIT SUNDARLAL SHARMA (OPEN) UNIVERSITY CHHATTISGARH BILASPUR

LABORATORY MANUAL

Post Graduate Diplome in Computer Application

(PGDCA)

Department of Computer Science

PANDIT SUNDARLAL SHARMA (OPEN) UNIVERSITY CHHATTISGARH, BILASPUR

पण्डित सुंदरलाल शर्मा (मुक्त) विश्वविद्यालय छत्तीसगढ़

PANDIT SUNDARLAL SHARMA (OPEN) UNIVERSITY CHHATTISGARH

Programme Guide

Post Graduate Diploma in Computer Application

(PGDCA)

ABOUT UNIVERSITY

Pandit Sundarlal Sharma (Open) University (PSSOU) Chhattisgarh, Bilaspur was established by the Chhattisgarh legislature in the 55th year of the republic of India. The Governor of the state accorded his assent to it on on 20th January, 2005 and the act was published in the Chhatisgarh Gazette (extra ordinary) no. 20 Raipur, Monday the 24th January, 2005. Dr. T.D. Sharma joined this university as the first Vice-Chancellor on 2nd March, 2005 while Dr. Sharad Kumar Vajpai takes office as Registrar on the 15th March, 2005. The university was formally inaugurated by the former Vice Prime Minister, Govt. of India and Leader of Opposition in Lok Sabha, Shri Lal Krishna Advani at a function presided over by the honorable Chief Minister of Chhattisgarh Dr. Raman Singh attended by Shri Ajay Chandrakar (Minister of Higher Education), Shri Amar Agrawal (Minister of Finance) along with large number of dignitaries and guest who graced the occasion with their presence. On this occasion Shri Advaniji said in his address …. 'Centre of gravity of the society is fast changing…... first of all man dominated the society on his physical strength, later on economic strength overshadowed it, and now the education strength dominates….'. He further said that whenever centre of ability opens, society develops all around and that wherever general university fails, Open University comes forward to the development of all kinds of people. Thus true to his intellectual status as thinker shri Advaniji underlined the importance of Open University system in the present age. To provide wide scope and development to the university, responsibility lies with the chief minister Dr. Raman Singh who emphatically expressed that study centers of the university will be opened from in the far flung areas of the state, especially in the tribal belt from Bastar to Sarguja. Thus all sub-division and blocks headquarters tribal belt of the state will be opened. This way all sub-divisions and block headquarters will be connected to the university through these study centers and will have facility of wider education, of better library and guidance. Thus the dream we saw at the fulfilled. The State Government has promised to render all possible help in the consolidation of the university and in achieving its goals.

VISION:

The Pandit Sundarlal Sharma (Open) University Chhattisgarh, Bilaspur is the only State Open University in Chhattisgarh, delivers to build up the quality human resource base of the State and, along with other Open Universities of the country, and moves towards the improvement of the quality of open distance education. It also intends to promote and develop appropriate ambience to develop an international standard distance education scenario in our country, keeping in view of the demands for education of the learners in tune with the requirements of the twenty-first century.

MISSION:

- To propagate quality education in flexible mode all over the State and to provide access to different skills-enhancing educational programs.
- To collaborate with other Higher Education Institutions (HEIs) for academic and research endeavours.
- To provide education in the vernacular language, i.e., Chhattisgarhi and making it available at low cost to the underprivileged people.
- To provide facility of Life Long education to the intending learners.
- To integrate technological tools in the pedagogy for facilitating the learning experiences.
- To contribute to the existing body of knowledge through research and extension activities To render services for the development of the State in particular and the Nation in general in order to sensitize the learners towards a humanistic and democratic ecosystem.

ABOUT PROGRAMME

<div style="text-align:center; background:#1f9ab0; color:white;">Post Graduate Diploma in Computer Application</div>

a) **Programme Mission and Objective:** POST GRADUATE DIPLOMA IN COMPUTER APPLICATION is designed to give students the ability to develop their career to its fullest potential in the area of Computer Application. The education in Computer Application will combine theory and practices so that students will be prepared for a Computer oriented career. Following are the broader objectives of the programme:

   i.   To educate and prepare the prospective and diverse group of students of Chhattisgarh with Computer knowledge, networking and technical skills needed to serve organizations.

   ii. The objective of this programme is to cater to the needs of not only the fresh graduates and computer professionals but also to provide a technical update to an existing practitioner who required technical skill and knowledge.

   iii. Practice computer application, understand the fundamental principles of computer science, and continue to develop their technical competencies.

   iv. To make the students aware of changing environment and scope, in the field of computer application to operate in a competitive environment.

   v.   To seek continuous improvement in individual learning skills and personal development and to work with confident self-direction and originality so as to make a meaningful contribution to society.

   vi. An approach to the local students for making themselves best IT professionals in the Market.

b) **Relevance of the Program with HEI's Mission and Goals:** Pandit Sundarlal Sharma (Open) University Chhattisgarh is committed to endow with quality education to the mass where regular form of education cannot reach. In the line of the mission of the University, this programme will provide ample of opportunities to those rural and backward masses who are deprived of computer education and cannot find a place in regular education system. Apart from that it is also open to those who wish to continue their learning irrespective of their age.

c) **Nature of Prospective Target Group of Learners:** The prospective learners can be graduates of Chhattisgarh state belonging to both rural and urban areas who seek to find a place in the job market. This course will enable them to learn and acquire the basic knowledge and skills of Computer Application. By learning the multifaceted components of course one would be able to find higher and key positions in Organisational hierarchy with increased job responsibilities.

d) **Appropriateness of programme to be conducted in Open and Distance Learning mode to acquire specific skills and competence :** Post Graduate Diploma in Computer Application is one of the suitable course/programme to be offered through Open and Distance Learning mode. The conceptual knowledge can be thoroughly captured by the learners to acquire the capability which will make them polished for employment market.

e) **Instructional Design :**

   i. Duration and Credit: This programme has duration of one year although student may complete the programme gradually within a maximum period of three years. The programme has weightage of 28 credits. In this programme the student has to study 6 Subjects of 24 credit points. In the academic session students will have to submit two practical reports of 04 credit points. Contact sessions for every course will be arranged at the study centre where the students can solve their difficulties.

   ii. Medium: The course material for PGDCA programme will be in Hindi language. However students can opt for both English and Hindi language for answering the questions.

   iii. Learning Method: The learning method developed by University will comprise of independent form of delivery and will constitute the following components:

   a) Self-Instructional text books (Self Learning Materials).
   b) Counselling and contact sessions at the study centre by the subject experts.
   c) Preparing the students for writing practical reports.
   d) Group discussion and case studies.

iv. Means of Delivery: The students are given the syllabus of the courses and also the Self learning material. It helps the students to study a specific topic. If the student has any difficulty, he or she can make a note of it. They can discuss these noted difficulties with the counsellor during the contact session at the study centre.

f) **Procedure for admissions, curriculum transaction and evaluation :**

   i. **Procedure of Admission:** The admission for this programme will be on yearly basis (or as decided by the University from time to time). All the admissions for the course will be done through online mode. Applications will be invited by the University with in stipulated time period where students have to apply for the same with all their testimonials and required fees. The minimum eligibility for admission into this programme for the candidates is having passed Graduation examination of Chhattisgarh Higher Education or any other equivalent examination of a Board or University recognized by Pandit Sundarlal Sharma (open) University Chhattisgarh.

   ii. **Curriculum Transaction:** For successful completion of the proposed programme, a candidate has to obtain minimum pass marks of 40% in each of the subjects and will have to submit practical reports prepared under the guidelines of the supervisor. Degree will be awarded on the basis of marks obtained in the examination. Passing in all subjects will be essential criteria for the award of degree.

   iii. **Evaluation Pattern:** The pattern of evaluation for each subject of PGDCA programme will have following three components : (a) Continuous Assessment through TMA (b) Practical work/Viva-Voce (c) Term End Examination (TEE)

   a) **Continuous Assessment through Tutor Mark Assignment:** For each course in every year the student's performance will be continuously evaluated. Continuous assessment schedule and evaluation will be done by the Study Centre which will be monitored by the department concern. The students have to submit Tutor Mark Assignment (TMA) carrying 30 marks before the Term end examination (TEE) which will be the base of evaluation.

b) **Practical work/ Viva Voce:** Evaluation of this component will be based in practical work submitted by the students with viva-voce. Viva-voce will be conducted in the presence of an external examiner.

c) **Term End Examination (TEE):** Term End Examination (TEE) will be conducted at the end of the learning period through an examination as like other universities. Term End examination (TEE) of each subject will be of 70 marks and will be on subjective mode. The questions in the examination will comprise of very short type answer, brief answers and long type answers.

g) **Course Structure:**

POST GRADUATE DIPLOMA IN COMPUTER APPLICATION
DURATION OF THE COURSE: 01 YEAR
ELIGIBILITY: GRADUATION

COURSE Scheme

COURSE CODE	COURSE TITLE	CREDIT	TMA (max marks)	TEE (max marks)	Total (marks)
PGDCA01	Fundamentals of Computer and Information Technology	4	30	70	100
PGDCA02	Operating System	4	30	70	100
PGDCA03	RDBMS Programming in FoxPro	4	30	70	100
PGDCA04	PC Packages	4	30	70	100
PGDCA05	Internet and Web Development	4	30	70	100
PGDCA06	Object Oriented Programming in C++	4	30	70	100
PGDCA07	Computer Lab-I (Based on PGDCA 03 and PGDCA 04)	2			100
PGDCA08	Computer Lab-II (Based on PGDCA 06)	2			100
Total Marks					800

h) **Syllabus of Programme:**

पेपर I   फंडामेंटल्स ऑफ कम्प्यूटर एण्ड इंफॉर्मेशन टेक्नोलॉजी
(Fundamental of Computer and Information Technology)

अध्याय–1 कम्प्यूटर को जानें (Know the computer)

अध्याय–2 पर्सनल कम्प्यूटर (Personal computer)

अध्याय–3 कम्प्यूटर आर्गेनाइजेशन एवं आर्किटेक्चर (Computer Organisation and Architecture)

अध्याय–4 सेन्ट्रल प्रोसेसिंग यूनिट(Central Processing Unit CPU)

अध्याय–5 इनपुट डिवाइसेज (Input Devices)

अध्याय–6 आउटपुट डिवाइसेज (Output Devices)

अध्याय–7 स्टोरेज डिवाइसेज (Storage Devices)

अध्याय–8 स्टोरेज डिवाइसेज (Storage Devices)

अध्याय–9 ऑपरेटिंग सिस्टम (Operating System)

अध्याय–10 प्रोग्रामिंग भाषा (Programming Language)

अध्याय–11 वायरस (Virus)

अध्याय–12 संचार एवं सूचना प्रौद्योगिकी (Communication and IT)

अध्याय–13 नेटवर्क (Network)

अध्याय–14 कम्युनिकेशन सिस्टम और प्रोटोकाल (Communication System and Protocol)

अध्याय–15 Number System

पेपर II   ऑपरेटिंग सिस्टम (Operating System)

अध्याय–1 ऑपरेटिंग सिस्टम (Operating System)

अध्याय–2 डिस्क ऑपरेटिंग सिस्टम (Disk Operating System)

अध्याय–3 विण्डोज 98(Windows 98)

अध्याय–4 विण्डोज ऐक्सेसरिज(Windows Accessories)

अध्याय–5 विण्डोज इक्स्प्लोरर(Windows Explorer)

अध्याय–6 टूल्स (Tools)

अध्याय–7 विण्डोज के उन्नत फीचर (Advanced Features of Windows)

अध्याय–8 सिस्टम टूल्स (System Tools)

अध्याय–9 कम्यूनिकेशन (Communication)

अध्याय–10 विण्डोज के बहुविध प्रयोक्ता तथा एक्सेसिबिलिटी फीचर ,सूचना शेयरिंग तथा ओ.एल.ई(Multiple Users & Accessibility Features Of Windows,Information Sharing and OLE)

अध्याय–11 विण्डोज एन.टी (Windows NT)

अध्याय–12 लाइनक्स (Linux)

अध्याय–13 तकनीकी शब्दावली(Glossary)

पेपर III आर डी.बी.एम .एस प्रोग्रामिंग इन फॉक्सप्रो
(RDBMS Programming in FoxPro)

अध्याय–1 फॉक्सप्रो –पर्सनल कम्प्यूटर का रिलेशनल डेटाबेस प्रबंधन तंत्र

अध्याय–2 डेटा देखना एवम् संपादित करना

अध्याय–3 मॉडिफाई स्ट्रक्चर ,मेमो फील्ड तथा फाइल यूटिलिटिज

अध्याय–4 डेटाबेस फाइलों को सॉर्ट एवं इन्डेक्स करना

अध्याय–5 रिपोर्ट तथा लेबल

अध्याय–6 मेमोरी वेरियेबल्स ,तिथि व समय फंक्शन तथा की बोर्ड मैक्रो

अध्याय–7 गणितीय कमाएड्स तथा फंक्शन्स

अध्याय–8 फॉक्सप्रो में प्रोग्रामिंग

अध्याय–9 बहुल डेटाबेस फाइलें

अध्याय–10 स्ट्रक्चर क्वेरी लैग्वेज

अध्याय–11 कस्टम स्क्रीन ,प्रयोक्ता परिभाषित फंक्शन तथा अन्य यंत्र

पेपर IV पी.सी. पैकेजेज (Packages)

अध्याय–1 विण्डोज XP को जानें (Know the Windows XP)

अध्याय–2 एक्सेसरीज एवं अन्य टूल्स (Accessories and Other Tools)

अध्याय–3 फाइल एवं फोल्डरों का प्रबंधन (Managing files and Folders)

अध्याय–4 माइक्रोसॉफट ऑफिस XP तथा अन्य ऑफिस सुईट (Microsoft Office XP & Office Suite)

अध्याय–5 सुईट के सामान्य तत्व (Common Element Of The Suite)

अध्याय–6वर्ड प्रोसेसिंग और MS-वर्ड (Word Processing and MS –Word)

अध्याय–7 टेक्स्ट फॉर्मेटिंग(Text Formatting)

अध्याय–8 डॉक्यूमेन्ट फॉर्मेटिंग (Document Formatting)

अध्याय–9टेबल एवम् ग्राफिक्स (Table and Graphics)

अध्याय–10 मेल मर्ज,व्यूज,टेम्पलेट एवं विजार्ड (Mail Merge, Views, Template and Wizard)

अध्याय–11 स्प्रेडशीट तथा MS एक्सेल (Spreadsheet and MS -Excel)

अध्याय–12 वर्कशीट फॉर्मेटिंग (Worksheet Formatting)

अध्याय–13 फंक्शन तथा ऑपरेटर (Fucation and Operator)
अध्याय–14 चार्ट तथा वेब ऑब्जेक्ट (Chart and Web Object)
अध्याय–15 प्रिजेंटेशन तथा MS- पावर पॉइन्ट (Presentation and MS –Powerpoint)
अध्याय–16 स्लाइड्स फॉर्मेटिंग (Slides Formatting)
अध्याय–17 टेबल,चार्ट एवं अन्य ड्राइंग ऑब्जेक्ट्रस (Table, Chart and Other Drawing Objects)
अध्याय–18 स्लाइड ,व्यूज नोट्स ,हैंडआउट्स (Slides ,Views, Notes, Handouts)
अध्याय–19 आउटलुक एक्सप्रेस(Outlook Express)
अध्याय–20 एक्सेस XP का परिचय (Introduction To Access XP)
अध्याय–21 एक्सेस में टेबल का निर्माण करना (Create A Table in Access)
अध्याय–22 रिलेशनशिप (Relationships)
अध्याय–23 फिल्टर्स तथा क्वेरीज (Filters And Queries)
अध्याय–24 फॉर्म्स (Forms)
अध्याय–25 रिपोर्ट्स (Reports)

पेपर   V इन्टरनेट एण्ड वेब डवलपमेंट
(Internet &Web Development)
अध्याय–1 कम्प्यूटर नेटवर्क (Computer Network)
अध्याय–2 इन्टरनेट का परिचय   (Introduction to Internet)
अध्याय–3 इन्टरनेट कनेक्टिविटी   (Internet Connectivity)
अध्याय–4 इन्टरनेट तकनीक और प्रोटोकॉल्स (Internet Technology and Protocols)
अध्याय–5 इन्टरनेट की सर्विसेज परिभाषा तथा कार्य (Services Of Internet Definition and Functions)
अध्याय–6 इलेक्ट्रानिक मेल (Electronic Mail)
अध्याय–7 वर्ल्ड वाइड वेब (World Wide Web)
अध्याय–8 ब्राउजर्स (Browsers)
अध्याय–9 हायपर टेक्सट मार्कअप भाषा(Hyper Text Markup Language)
अध्याय–10 वेब पब्लिशिंग   (Web Publishing)
अध्याय–11 जावास्क्रिप्ट का परिचय (Introduction to Java script)
अध्याय–12 इलेक्ट्रॉनिक कॉमर्स /ई–कॉमर्स   (Web Publishing

पेपर VI ऑब्जेक्ट ओरिएन्टेड प्रोग्रामिंग इन
(Oops and Programming in C++)
अध्याय–1 C++ का परिचय (Overview of C++)

अध्याय—2 C++ का वातावरण (C++ Environment)

अध्याय—3 C++ प्रोग्राम्स का निर्माण तथा संकलन करना(Creating and Compiling c++ Programs)

अध्याय—4 निर्णयन एवं शाखान्वयन (Decision Making and Branching)

अध्याय—5 ऐरेज तथा का फंक्शन (Arrays and Functions)

अध्याय—6 क्लासेज तथा ऑब्जेक्ट्स (Classess and Objects)

अध्याय—7 ऐरे ,पॉइन्टर्स , रेफरेन्सेज, तथा डाइनैमिक एलोकेशन ऑपरेटर्स (Array, Pointers, References and the Dynamic Allocation Operators)

अध्याय—8 कन्स्ट्रक्टर्स तथा डिस्ट्रक्स्र्स (Arrays and Functions)

अध्याय—9 फंक्शन तथा ऑपरेटर ओवरलोडिंग   (Function and Operator Overloading)

अध्याय—10 इन्हेरिटेन्स (Inheritance)

अध्याय—11 पॉलीमॉर्फिज्म   (Polymorphism)

अध्याय—12 टेम्पलेट और अपवाद हैंडलिंग (Templantes and Handling)

i)   **List of Practicals:**

Computer Lab1: RDBMS Programming in FoxPro, PC Packages

❖ **RDBMS Programming in FoxPro:**

1. Understanding of features and data types of foxpro.

2. Creation, deletion and renaming a file in foxpro.

3. Creation of a database Student having 10 records of following fields:
   Name, Roll No, Marks, Address, Mobile No.

4. Perform following operations on Student Database:

   a) List the record.

   b) Add new field city.

   c) Display last record of database.

   d) Edit record no 4.

5. Describe steps to create memo field in foxpro database.

6. Sorting and indexing in foxpro.

7. Creation of Single index and compound index file on student record.

8. Creation of macro.

9. Implementation of SET command.

10. Program for printing table.

❖ **PC Packages:**

1. Creating, Opening, Closing, Saving and editing a word Document.

2. Insertion of Header and Footer in the document.

3. Perform fonts, page formatting, and color and bullet operation in a word document.

4. Use of word art, spell check and work with page layout with save as command.

5. Creation of a link between two files using Hyperlink.

6. E-mail merge and providing protection of a document.

7. Creation of a letter/application in different subjects.

8. Creation of records in excel sheet for students marks of five subjects and calculation of their average percentage using formulas.

9. Operation of data sorting in worksheet.

10. Use of mathematical functions, date function and time function.

11. Creation of new slide and duplicate slide in power point.

12. Steps of presentation and creation of presentation for the seminar in a topic.

13. Use of animation, audio and clip art in power point presentation.

14. Changing background and adding slides in presentation.

15. Creating and printing handouts.

Computer Lab2: Object Oriented Programming in C++

1. Write a program to print hello in c++.

2. Write a program to print bio data in c++ consisting of name, class, roll no, mobile no, address.

3. Write a program to perform addition of two numbers.

4. Write a program to perform subtraction, multiplication and division of two numbers.

5. Write a program to find out area of circle and rectangle.

6. Write a program to check whether a number is even or odd?

7. Write a program to find out greatest among three numbers.

8. Write a program to print a day among seven days using switch command.

9. Write a program to print first 10 natural numbers using while loop.

10. Write a program to print first 10 even numbers using for loop.

11. Write a program to print first five natural numbers in reverse order.

12. Write a program to find out sum of first five natural numbers using loop.

13. Write a program to define an array of size 5 and print its value.

14. Write a program to perform addition of two array of size 5.

15. Write a program to find out sum of two numbers using function.

16. Write a program to perform input to an array of size five and output the value, using function.

17. Write a program to define class and object.

18. Define constructor using a program.

19. Define Polymorphism using a program.

20. Define Inheritance in C++ with its types.

Dr. Anita Singh
Incharge NAAC Criteria-I
PSSOU, CG Bilaspur