

DETAILED SYLLABUS
POST GRADUATE DIPLOMA IN COMPUTER
APPLICATIONS
(PGDCA)
Effective from JULY-2026



MakhanlalChaturvedi National University of Journalism and
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SEMESTER –II

Subject Code	Subject Name	Credits/Hours			Theory Paper	Practical Exams	Internal Evaluation	Total Marks
		L	T	P				
2PGDCA1	Emerging Digital Technologies	4	1	0	70		30	100
2PGDCA2	Web Development Technologies	4	0	1	70	20	30	120
2PGDCA3(A) OR 2PGDCA3(B)	Elective-IV Financial Accounting with Tally OR Linux and Cyber Security Fundamentals	4	0	1	70	20	30	120
2PGDCA4(A) OR 2PGDCA4(B)	Elective-V Multimedia Design and Production OR Data Visualization with Power BI	4	0	1	70	20	30	120
Total Marks					280	60	120	460

(L – Lecture, T-Tutorial P-Practical)

Optional-2	English Typing Skill
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General Instructions:

1. For passing the subject examination minimum 40% marks must be separately scored in Theory Paper, Practical Exams and Internal Evaluation in the subject.
2. For passing the semester, minimum aggregate marks must be 45% in the semester.

SEMESTER-II

2PGDCA1–Emerging Digital Technologies

Detail Syllabus:

UNIT-I: Overview of IT and its Evolution: Role of IT in the Digital Economy, Impact of IT on Society, Education, E-governance, e-democracy, Government efforts to encourage citizen participation, PPP model, E-governance websites & services, MPONLINE services, UIDI & Aadhar, E-governance mobile apps like UMANG, Digital Locker, Digital Library., E-Commerce- introductions, concepts, Benefits and impact of e-commerce. Electronic Payment Systems: Introduction, Types of Electronic Payment Systems, RTGS, IMPS, NEFT, Payment gateway, debit & credit card, internet banking, mobile wallet, UPI, BHIM, PAYTM app, online shopping, online marketing. Green Computing and Sustainable IT Practices, Applications of AI, Cloud, or IoT.

UNIT-II: Cloud Computing and Virtualization: Introduction to Cloud Computing and its Architecture, Types of Cloud: Public, Private, Hybrid, Community, Service Models: IaaS, PaaS, SaaS, Virtualization Concepts: Hypervisors, Virtual Machines, Containers, Cloud Security, Privacy, and Challenges, Major Cloud Providers: AWS, Microsoft Azure, Google Cloud.

UNIT-III: Artificial Intelligence, Machine Learning & Data Analytics: Introduction to AI and ML Concepts, AI Applications in Automation, Healthcare, Education, and Business, Overview of Machine Learning Models: Supervised, Unsupervised, Reinforcement Learning, Basics of Data Science and Data Analytics, Predictive Analytics and Business Intelligence Tools, Introduction to Generative AI and Chatbots.

UNIT-IV: Internet of Things (IoT), Blockchain & Cybersecurity: Internet of Things (IoT): Concepts, Architecture, and Applications, Smart Devices, Sensors, and Communication Technologies, Blockchain Technology: Structure, Function, and Use Cases, Introduction to Cryptocurrencies and Smart Contracts, Fundamentals of Cybersecurity: Threats, Attacks, and Prevention, Data Privacy and Digital Ethics

UNIT-V: Emerging Digital Technologies and Future Trends :5G and Edge Computing, Augmented Reality (AR), Virtual Reality (VR), and Mixed Reality, Robotic Process Automation (RPA) and Chatbots, Quantum Computing: Concept and Applications, Green and Ethical IT Practices,

Books and References:

- Fundamentals Of Information Technology By Alex Leon & Mleon, Vikas Publications.
- E-Commerce An Indian Perspective (Second Edition) By Pt Joseph, S.J. Prentice-Hall
- Information Technology & Computer Applications by V K. Kapoor, Sultan Chand & Sons, New Delhi.
- <https://msftstories.thesourcemediaassets.com/sites/93/2020/04/Student-Guide-Module-1-Fundamentals-of-AI.pdf>
- https://cbseacademic.nic.in/web_material/Curriculum25/publication/srsec/843_AI_Student_HandbookXI.pdf

Practical Questions:

- Create a free cloud account (Google Cloud or AWS Educate)
- Host a small file or application on the cloud
- Demonstrate virtualization using VirtualBox or similar software
- Explore ChatGPT or Google Gemini for AI-based problem solving
- Perform basic data visualization using Excel or Google Sheets
- Demonstrate AI image or text generation tools
- Demonstrate IoT concepts using online IoT simulators (TinkerCAD, Wokwi)
- Explore a simple blockchain demo (Ethereumtestnet / online simulators)
- Research a recent cyber-attack case study and discuss security solutions
- Explore AR/VR demo applications

SEMESTER-II

2PGDCA2–Web Development Technologies

Detail syllabus:

UNIT-I: Introduction to Internet, Internet Evolution & Concept, Internet Vs Intranet, Internet Service Provider (ISP) & its Function, URLs, Portals, Internet Services and Applications, E-MAIL- Basics of Sending & Receiving, Free Email services, Internet chatting - Voice chat, Text chat, World Wide Web (WWW)- History, Working, Web Browsers & its functions, Concept of Search Engines, Searching the Web, HTTP, URLs, Web Servers, Web Protocols.

UNIT-II: HTML- Concepts of Hypertext, Versions of HTML, Elements of HTML, Syntax, Tags & Attributes, Head & Body Sections, Building, HTML Documents. Inserting Texts, Images, Hyperlinks, Backgrounds And Color Controls, Different HTML Tags, Table Layout and Presentation, Creating Lists, Use of Font Size & Attributes, List Types and Its Tags, Use of Frames and Forms in Web Pages, Creating Frameset, Opening pages into frames, Design Forms Control.

UNIT-III: Cascading Style Sheet (CSS) – Introduction, creating style , using inline and external CSS, Creating Divs with ID style, creating Tag & Class style using font family, size and colors, creating borders, Navigation links, creating effects with CSS.

JavaScript Overview, syntax & conventions, Variables, Expressions, Branching & Looping statements, Functions, Arrays Objects, Events & Document Object Model - onClick, onMouseOver, on Submit, on Focus, on Change, onBlur, onLoad, onUnload, Alerts, Prompts & Confirms.

UNIT-IV: Designing Websites with Expression Web, Creating a New Site, Creating a New Page, Inserting and Formatting Text, Creating & Inserting Images, Adjusting Transparency settings, Adding Images with alternative Text, Aligning images, creating Email Link, Linking to other websites, Testing and targeting Links, Organizing files & folders, Designing Accessible Tables, styling a table, Editing table layouts, Adding style to a table using CSS.

UNIT-V: Word Press-What is Word Press, Installation, Login, overview of admin panel, user profile, Word Press Themes, Themes depository, Create & add a new logo, Set up a static home page, Create Posts, Delete pages, Create Menu, Add a post, Delete a post, Add Widgets, Upload images, Add Images to a post, Insert and Format Text, Add a Hyperlink to an image, Add a Hyperlink to some text,

Protocols- meaning, different web protocols: FTP, DNS, TCP, UDP, HTTP, IP Telnet Concept, FTP Commands: viewing Files and directories, Transfer and rename files, FTP with Filezilla&CuteFTP, Web Hosting: Concept, Introduction to Domain Name & DNS, procedure to register a Domain Name, Procedure for web hosting, Space on Host Server for Website.

Reference Books:

- Level Module- M 1.2 - Internet & Web Page Designing By V.K.Jain – Bpb Publications.

- E-Commerce An Indian Perspective (Second Edition) - By P. T. Joseph, S.J. Esentice-Hall Of India
- Internet For Everyone - Alexis Leon And Mathews Leon, Vikas Publishing House Pvt. Ltd., New Delhi
- WordPress Made Super Simple - How Anyone Can Build A Professional Looking Website, by Jack Davies and Sarah Wiley
- Internet For Dummies - Pustak Mahal, New Delhi
- A Beginners Guide To Html Available At: [Http://Www.Ncsa.Uiuc.Edu /General/Internet /Www.htmlprimerall. Html](http://Www.Ncsa.Uiuc.Edu/General/Internet/Www.htmlprimerall.Html)
- Introduction To Javascript Available At - [Www. Mcu. Ac. In/Javascriptguide.Pdf](http://Www.Mcu.Ac.In/Javascriptguide.Pdf)
- How To Create A Website Using Wordpress: The Beginner's Blueprint for Building a Professional Website in 3 Easy Steps Kindle eBook , by Brian Patrick
- Wordpress for Beginners 2017: A Visual Step-by-Step Guide to Mastering Wordpress Kindle eBook by Dr. Andy Williams

Practical Questions:

- Q1. How to link an image to another page in HTML,
- Q2. How to create a link that opens a new web page window or tab.
- Q3. How to create links to sections on the same page in HTML
- Q4. Creating images as links with no borders.
- Q5. Creating a link without an underline in HTML.
- Q6. Changing link color when moving mouse over link in HTML.
- Q7. Creating a link to play a sound file in HTML
- Q8. How to create a link that goes to top of a web page.
- Q9. Creating HTML push button link and creating an HTML back button.
- Q10. How to create a link to automatically run .exe file once downloaded.
- Q11. Creating a mail link on a web page
- Q12. Explain how you can make your site live in Expression Web and word press?
- Q13. How you can perform validation in Expression Web and word press?
- Q14. How you can create a mailto form in Expression Web and word press?
- Q15. How you can add an image to your web page in Expression Web and word press?
- Q16. Design a website for your university using Expression Web and word press?
- Q17. Design a website for university e-library using Expression Web and word press?
- Q18. Design a website for MP Tourism and booking using Expression Web and word press?
- Q19. Design a website for online exam using Expression Web and word press?
- Q20. Design a website for E-ticketing system using Expression Web and word press?

SEMESTER-II

2PGDCA3 (A)–Financial Accounting with Tally

ELECTIVE-III

Detail Syllabus:

UNIT-I: Accounting Fundamentals :Introduction to Accounting - Meaning, Objectives & Importance, Types of Accounting (Financial, Cost, Management), Users of Accounting Information, Basic Accounting Terms & Concepts - Assets, Liabilities, Capital, Income, Expenditure, Profit, Loss, Debtors, Creditors, Double Entry System, Golden Rules, Concepts: Accrual, Matching, Going Concern, Consistency, Prudence, Accounting Process - Journal Entries, Ledger Posting, Trial Balance Preparation, Subsidiary Books & Cash Book - Purchase, Sales, Returns Books, Single, Double & Triple Column Cash Books, Final Accounts - Trading Account, Profit & Loss Account, Balance Sheet (with Adjustments), Financial Statement Analysis - Fund Flow Statement, Meaning, Sources & Applications of Funds, Schedule of Changes in Working Capital, Cash Flow Statement, Cash Flow from Operating, Investing & Financing Activities, Format as per AS-3, Ratio Analysis - Liquidity Ratios (Current, Quick), Profitability Ratios (Gross Profit, Net Profit, Return on Capital), Solvency Ratios (Debt-Equity, Interest Coverage), Activity Ratios (Stock Turnover, Debtors Turnover), Interpretation & Decision-making, Practical Exercises & Mini Project - Manual preparation of Journal, Ledger, Trial Balance, Final Accounts, Preparation of Fund Flow, Cash Flow & Ratios for a sample business case.

UNIT-II:Introduction to Tally Prime & Basic Accounting Entries: Introduction to Tally Prime - Features & Advantages, Installing & Navigating Tally Prime, Company Creation, Backup & Restore, Basic Tally Operations - Gateway of Tally, Company Features & Configurations, Security & Password Management, Accounting Masters - Creating & Altering Groups, Ledgers, Chart of Accounts, Voucher Entries - Contra, Payment, Receipt, Journal, Purchase, Sales, Debit Note, Credit Note, Day Book, Trial Balance & Basic Reports - Viewing & Printing Vouchers, Understanding Day Book & Trial Balance, Banking Features - Bank Reconciliation, Cheque Printing & Deposit Slips, Payment Advices, PDC Voucher, Non Accounting Vouchers - Memorandum Voucher, Reversing Journal, Optional, Cost Centers & Cost Categories, Budgeting & Scenario Management

UNIT-III:Inventory Management in Tally Prime: Introduction to Inventory Management, Inventory Masters - Stock Groups, Stock Categories, Stock Items, Units of Measurement, Compound Units, Godowns, Inventory Vouchers - Purchase Order, Sales Order, Delivery Note, Receipt Note, Rejection Out, Rejection In, Stock Journal, Physical Stock, Invoicing & Billing - Item Invoicing vs Accounting Invoicing, Multiple Price Levels & Lists, Discounts, Defining standard cost & selling price, Defining MRP, Actual & Billed Quantity, Inventory Reports - Stock Summary, Movement Analysis, Shortage, Ageing, Batch-wise Reports, Purchase Register, Sales register.

UNIT-IV:GST in Tally Prime : Overview of GST - Concept, Structure (CGST, SGST, IGST, UTGST), GST Registration, Returns, Tax Rates, GST Configuration in Tally - Enabling GST, Creating Tax Ledgers, Assigning GST Details to Masters, Recording GST Transactions - Intra-state & Inter-state Sales & Purchases, Taxable & Exempt Transactions, Reverse Charge Mechanism, GST Reports & Returns - GSTR-1, GSTR-2, GSTR-3B, Input Credit Summary, Generating & Exporting Reports for Filing.

UNIT-V:Advanced Accounting Features – TDS, MIS & Reports: TDS (Tax Deducted at Source) - Introduction to TDS & Applicability, TDS Ledgers & Configuration in Tally, Recording TDS on Expenses & Payments, TDS Reports, MIS Reports & Analysis - Balance Sheet, P&L, Ratio Analysis, Cash Flow & Fund Flow Statements, Management Reports & Export Options, Project Work & Assessment - Full Accounting Cycle in Tally with GST & TDS, Real-world business scenario simulation.

Reference Books:

- Nadhani, K.K, Accounting with Tally, BPB Publications, New Delhi
- Kogent Learning Solution, Tally ERP 9 in simple steps (Hindi), Dreamtech Press, New Delhi
- Goyal, Hemant Kumar, कम्प्यूटर द्वारा एकाउंटिंग, Radha Pocket Books
- N. Satyapal, Using Tally, Khanna Books Publishers, New Delhi
- Nadhani, Ashok K, Nadhani, Kisor K, Implementing Tally 9, BPB Publications, New Delhi

SEMESTER-II

2PGDCA4 (A)–Multimedia Design and Production

ELECTIVE-IV

Detail Syllabus:

UNIT-I: Introduction to Multimedia, Multimedia Definition and concept, Need of Multimedia, Applications of Multimedia, Development platforms for multimedia, Types of multimedia: Linear and Non-linear, Identifying Multimedia elements Text, Images, Sound, Animation and Video, Multimedia Hardware and Software requirement. Making simple Multimedia with Power Point Text as a component of Multimedia, Concepts of plain & formatted text, RTF & HTML texts, Object Linking and Embedding concept, Fonts– need & types, Importance of sound in Multimedia, Importance of Graphics in Multimedia, Video and Animation in Multimedia.

UNIT-II: Introduction to Image, Image types- Raster and Vector graphics, Image file formats (JPEG, PNG, GIF, BMP, TIFF), Basics of graphic design (color theory, resolution, composition), Image editing tools and techniques. Introduction to CorelDraw, Usage and Advantages, Introduction to User Interface, Introduction to tool panel and workspaces, Introduction to various size and formats of panels and layouts, File layouts and layout properties, Objects and using color profiles.

UNIT-III: Text tools and text properties, Creating Vector graphics by using editing tools, Importing Images and graphics in Corel draw layout, Creating shapes and editing shapes, Drawing curves and editing curves, Creating special text effects, Creating special object effects, Using color effects.

UNIT-IV: Using grid and rulers, Tracing images and graphics, working with borders and page arrangements, Using Masking effects with Text, Using Masking effects with objects

UNIT-V: Adobe Premier: Introduction, Area of Use, Setting up new Project, Workspace: Project Video Display, Selected Clip Display, project panel Project Timeline Toolbar,

Toolbar description: Selection Tool, Track Select Forward Tool, Track Select Backward Tool Ripple Edit Tool, Rolling Edit Tool, Rate Stretch Tool, Razor tool, Slip tool, Slide Tool, Pen Tool, Hand Tool, Zoom Tool. Importing files into Premier, Sequence, Titles, Video Motion, Video Opacity, Transition Panel, Effect panel, Color Correction, Adjusting Video Speed, Saving Project, Exporting Video

Reference Books:

- LearnCorel Draw 11 by BPB PUBLISHING
- Corel Draw the official Guide by Gray David Bouton, Corel Press
- Corel Draw Course 11, 12, X To X5 BY VISHNU P. SINGH, BPB PUBLISHING
- Instant sound forge (Audio) Fisher, Jeffrey,
- A guide to film making with software tools: Adobe Premire and Sound Forge NIIT

Practical Questions:

Q. Refer the following points and Design a wedding invitation card. Invitation Card should contain following:

- Size of card – 4.5 x 6.25 or 5 x 7 inches

- Proper phrase for invitation (Hindi or English)
- Name of bride and groom. (Hindi or English)
- Venue with garden name and address or Home Address (Hindi or English)
- Date of Marriage Ceremony.
- Name of Host
- Card Template and colour should match with mood of occasion.

Q. Design a cover page for a book on “Personality Development”. Book Cover should include the following:

- Name of Book
- A picture or graphics related to theme.
- Name of author (Dr. ABC Kumar)
- Name of Publisher and logo (Any publisher of your choice).
- Price of the book.
- Cover page of Book - 6 x 9 inches.
- Insert pictures and graphics according to theme.

Q. Refer the following points and design an invitation card for Showroom Opening based on following points:

- Size of card – 4.5 x 6.25 or 5 x 7 inches
- Name of showroom is “Charanpaduka (may try in hindi)”
- Charanpaduka are sellers of footwear with tagline Go Happy.
- New showroom is opening in – Platinum Plaza, Mata Mandir Road, Bhopal
- Date of opening ceremony is – Sunday, 22th April 2018 Timing 11:00 AM
- Proper phrase for invitation.
- Theme and background image or template of card should match with mood of occasion.
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Q. Design a poster for a student film which is a children film having 3-4 characters.

General Description of poster may include –

- Size of poster – 11 x 17 inches or 8.5 x 11 inches.
- Name of Film – Khulja Shim Shim
- Characters – two boys and a girl
- Direction – Suraj Jain
- Camera – Vinay Kumar
- Music – Sharmila

Khulja shim shim is a children film which about fulfilling a dream of children who want to go to Bhopal by train. Three children live in a village and they do not have enough money to buy a train ticket. Film is about how they fulfil their dream.

SEMESTER-II

Optional-2: English Typing Skill

Instructions for Typing Examination

- 1) Hindi and English Typing have been included as entirely optional subject in the PGDCA first and PGDCA second semesters, respectively.
- 2) Typing test of 15 minutes will be conducted on MPOnline exam centers.
- 3) Students who opt for the Typing examination are required to pay per typing examination fees of ₹250 + 18% GST—in addition to the prescribed examination fees for the PGDCA—at the time of filling out the examination form.
- 4) The Hindi and English Typing examinations for students will be conducted through MPOnline, at the currently following examination centers.

State	City	Exam center address
Madhya Pradesh	Bhopal	iON Digital Zone iDZ Prestige 1 Shree Jairam Education Society
Madhya Pradesh	Bhopal	iON Digital Zone iDZ Prestige 2 Shree Jairam Education Society
Madhya Pradesh	Bhopal	iON Digital Zone iDZ RGPM Sankhedi
Madhya Pradesh	Gwalior	iON Digital Zone iDZ Chitoura Road
Madhya Pradesh	Indore	iON Digital Zone iDZ Sri Aurobindo
Madhya Pradesh	Indore	iON Digital Zone iDZ SAGE
Madhya Pradesh	Jabalpur	iON Digital Zone iDZ Gram Raigawan Near Patan Bypass
Madhya Pradesh	Sagar	SSHC Jain Institute of Management and Research
Madhya Pradesh	Sagar	Adina Institute of Science and Technology
Madhya Pradesh	Satna	iON Digital Zone iDZ Karhi Road Amoudha
Madhya Pradesh	Ujjain	iON Digital Zone iDZ Gram Gangedi Near Mahaveer Tapobhumi

- 5) The minimum passing marks for English and Hindi typing is 50% with the typing speed as follows.

Hindi Typing	20 NWPM
English Typing	30 NWPM

- 6) The typing speed of the candidate will be assessed in Net Words Per Minute (NWPM). Marks will be determined as per the table below.

English	
Typing Speed	Scaled Score
30 – 40 NWPM	50.00 %
41 – 50 NWPM	60.00 %
51 – 60 NWPM	70.00 %
61 – 70 NWPM	80.00 %
71 – 80 NWPM	90.00 %
> 80 NWPM	100.00 %

Hindi – Unicode	
Typing Speed	Scaled Score
20 – 25 NWPM	50.00 %
26 – 30 NWPM	60.00 %
31 – 35 NWPM	70.00 %
36 – 40 NWPM	80.00 %
41 – 50 NWPM	90.00 %
> 50 NWPM	100.00 %

- 7) A candidate will be declared 'qualified' if he/she secures 50% marks/score or more.
- 8) The Study Institute will prepare students for Hindi and English typing. The Study Institute will organize practice sessions for typing tests during the semester.