

# **CERTIFICATE IN INFORMATION TECHNOLOGY (CIT)**



**Govt. V.Y.T. PG Autonomous  
College, Durg (C.G.)**

# CERTIFICATE IN INFORMATION TECHNOLOGY (CIT)

## INTRODUCTION TO THE PROGRAMME

The recent rapid availability of computers in a large range of configurations has thrown open the need for trained manpower in the areas. Many investigations and studies have indicated an alarming shortage of manpower in the 2020 and beyond. This vacuum was filled up rapidly by proliferation of a large number of computer training institutions. Government V.Y.T. PG Autonomous College stepped in to play an active role in the development of appropriate manpower to relate to the national development plans.

This programme aims to introduce the concept of Hardware, Software, Multimedia and Internet technologies. Also, includes is a laboratory course where the student gets hands on experience.

### Program Objectives-

This programme aims to introduce the concepts of Hardware, Software, Multimedia and Internet technologies. Also, included is a laboratory course where the student gets hands on experience.

The following are the objectives of CIT:

- Develop algorithms and flowcharts for problem solving
- Introduce programming concepts
- Introduce various aspects of Computer communication
- Introduce the concept of Networking
- Introduce social, legal and ethical aspects of IT



- Discuss the role of IT in various fields such as Business, Governance, Education and Medicine
- Introduce the concept of Information System
- Discuss the latest trends in IT
- Discuss the basic principles of Internet
- Search for information on Internet
- Discuss various applications of Internet
- Discuss the issue related to design of a web page
- Introduce the concept of Multimedia
- Introduce the process of working with MS-Windows and Linux
- Develop and execute programs using C language • Create databases
- Create Web Pages

Scheme of certificate in information technology (CIT) Session 2022-23 will be introduced from this session. The CIT is offered by the Govt. V.Y.T. PG Autonomous College, Durg (C.G.) through the medium of English. The syllabi and scheme of examination are detailed below:

**Minimum Duration: 6 Months**

**Maximum Duration: 2 Years**

**Eligibility: 10+2 from any recognized secondary education board of any state of India.**

**Medium of instruction**

The Certificate in information technology (CIT) is offered by the, Govt. V.Y.T. PG Autonomous College, Durg (C.G.) in English or Hindi medium. Students do their Project Work in English.

**Maximum Age: 25 years.**









### **Minor component of the evaluation system**

**Assignments:** - Submission of assignments is compulsory. Assignments of a Course carry 33% weightage. Student will have to submit one assignments for each paper. Students will not be allowed to appear for the final examination for a CIT, if they do not submit the assignment in time. If student do not get a passing marks in any assignments student have to submit it again.

**Practical** - carry 25 marks.

### **Major component of the evaluation system**

**Theory Paper:-** Theory paper carries 67% weightage in the final result. In case, student fail to secure a pass score (40% marks) in the final examination, student will be eligible to reappear in the next year final examination for CIT.

**Duration of Theory Examination: 2 hours**

### **EVALUATION**

Evaluation consists of three parts: 1) assignments, 2) final Examination 3) practical examination. In the final result, assignment of a CIT carries 33% weightage, While 67% weightage is given to final examination, Following is the scheme of awarding divisions and grades:

Division	Percentage Range	Grade
First	75% and above	A - Excellent
First	60% to 75%	B- Very Good
Second	50% to 59.99%	C - Good
Pass	40% to 49.99%	D - Satisfactory
Unsuccessful	Below 40%	E - Unsatisfactory

Students are required to score at least 40% marks in assignments as well as final examination separately. In the overall computation also, you must get at least 40% marks in each paper to claim the Certificate in CIT.

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### Re-evaluation:-

There is provision for re-evaluation of final exam (theory) answer copies (anyone or two). The students can apply for re-evaluation of final exam (theory) answer copies against payment of Rs.250/- per theory paper.

1. There will be no ATKT.
2. Students will get one chance to appear for failed subject.

### EVALUATION PATTERN

Theory Paper		
Paper-I	Fundamentals of Computer Systems	100 Marks
Paper-II	Introduction to IT & Web based Technologies	100 Marks
Paper-III Practical	Practical based on Paper I and Paper II	50 Marks

### Question Paper Format and Distribution of Marks for CIT Examination.

1. The question paper will be divided into three Sections - A, B & C.
2. Section A shall contain very short answer type questions (answer in one or two sentences) or objective type questions. (No Multiple choice questions, No 'Fill in the blank' type Questions).
3. Section B shall contain short answer type questions with the limit of 150 words. **(50% internal choice)**
4. Section C shall contain long answer/descriptive type questions. The students are required to answer precisely and the answer should not exceed the limit of 350 words. **(50% internal choice)**
5. The scheme of marks should be as follows:

Question Type	MM 50. (Marks x No of Questions)
A (Very Short Answer)	1 x 10 = 10
B (Short Answer)	2 x 5 = 10
C (Long Answer)	3 x 10 = 30

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**Syllabus and Marking Scheme for CIT.**

Paper No.	Title of the Paper	Marks Allotted		
		Theory/Practical	Internal	Assignment
I	Fundamentals of Computer Systems	70		30
II	Introduction to IT and Web Based Technologies	70		30
III	Practical (Laboratory Course)	40		10
Total		<b>180</b>		<b>70</b>
Grand Total		<b>250</b>		

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# Syllabus

**Scheme of certificate in information technology (CIT)**

**Session 2022-23**

**PAPER- I**

**Fundamentals of Computer Systems**

**Max. Marks - 50**

**UNIT -1      Hardware and Software: An Introduction**

Introduction to PC, Central Processing Unit (CPU) , Control Unit, Types of Main Memory , Secondary (auxiliary) Memory , Input /Output devices , Peripherals, Memory and Storage Devices, Input -output Devices, Classification of Software, Evolution of Operating System, Types of Operating System, Computer Virus, Introduction to Databases, Databases Development Life Cycle, Applications of DBMS.

**UNIT -2      Problem Solving Techniques**

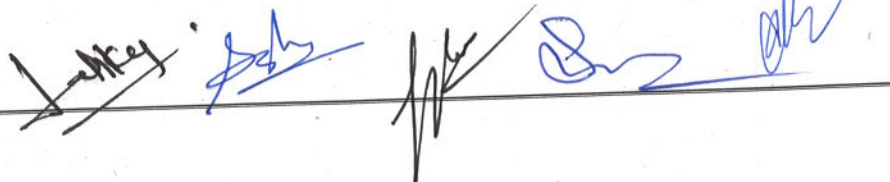
Problem Solving, Algorithm, Flow Chart, Execution of a C Program, Structure of a C Programme, Basic Components of C Programming, Statements in C Programming, Array in C, Use of C Programming Language.

**UNIT -3      Networking and Communication**

Data and Signal, Physical Connection, Data Transmission Mode, Modem, Speed of data transmission, Modes of data transmission, Network devices, Communication Media, Modes of Wireless Transmission, Network Architecture, Topologies, Classification of Network, Reference Models, Network applications.

**UNIT -4      Information Security**

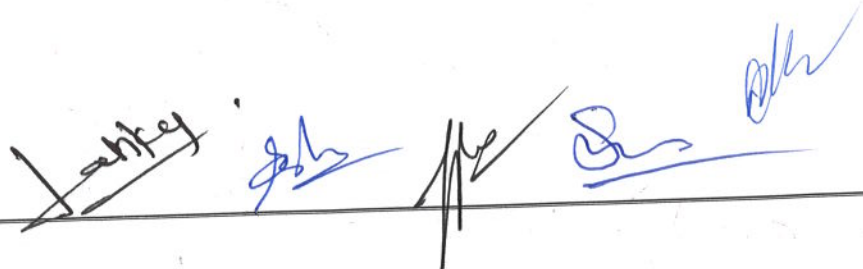
Definition and Need of Information Security, Definition Related to Information Security, Types of Threats, Types of Security Measures, Encryption: A Defensive System Against Threats, Security Policies. Infection Process, Viruses, Worm, Trojan



Horses, Emerging Attacks: Social Engineering, Meaning of Network Security, Threats to Network Security, Comparison with Computer security, Security Issues for Small and Medium Sized Businesses, Tools for network Security, Elements of Network Security, Secure Network Devices, Significance of Network Layout in Network Security.

#### References:

01. P. K. Sinha, Computer Fundamentals, BPB Publication, New Delhi 2007.
02. P. Sudharsan & J. Jeyabalan, Computers-systems and applications, JAICOPublishing House, Mumbai, 2005.
03. V.Rajaraman, Fundamentals of Computers, PHI Publication, New Delhi 2008.
04. T.N. Srivastava, An Introduction to Computers & their Application to Banking, Macmillan, Macmillan India Limited, 2000.
05. Computer Fundamentals by V Raja Raman, PHI Publication New Delhi, Year 2008
06. Computer Fundamentals by P K Sinha and Preeti Sinha, BPB Publication New Delhi, Year 2007
07. Computer Fundamentals and Personal Computer Software by V C Jain, BPB Publication New Delhi, Year 2006
08. Comdex Computer Course Kit by Vikas Gupta, Dreamtech Publication, N Delhi, Year 2007
09. Computer Fundamentals by P K Sinha & Preeti Sinha, BPB Publication New Delhi, Year,2008
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13. Elmasari, Navathe, "Fundamentals of Database Systems", Addison Wesley, New Delhi. Year 2000.
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**Scheme of certificate in information technology (CIT)**

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**PAPER- II**

**Introduction to Information Technology**

**Max. Marks - 50**

**UNIT-1 Elements of Information Technology**

Data, Information, Knowledge and Wisdom, Types of Information, Sources of Information, Quality of Information, Value of Information, Storage of Information, Information Effectiveness Parameters, Types of Information Systems, Evolution of ICT, Meaning of ICT, Benefits of ICT, Concept of Digital Divide, Reasons for the Existence of the Divide, Dimensions of the Divide, Impact of Digital Divide, Measures to Bridge the Divide, Real Space Vs. Cyberspace, Digital Identity: An Overview, Verifying Vs. Revealing an Identity, Cyber and Computer Crimes, Architecture of Cyberspace, Preventing Crimes, Implications of Choosing the Link System, Road to Implementation.

**UNIT -2 State of the art practices in Information Technology**

Embedded System: An Introduction, Embedded Operating System, Requirements and Specification in Embedded System, Programming Languages for Embedded System and Classification, Selected Embedded System applications, Human Computer Interface: Different Perspectives, HCI Development and its Applications, Future/Advance Methods of Communication with a Computer, What is Computer Vision, Basic Terminology, Goals of Computer Vision, Technical Challenges, Applications of Computer Vision, Advantages of Computer Vision, Examples.

**UNIT-3. Multimedia: The Concept**

Hardware for Multimedia Computer, The CPU, The Monitor, Input-output Devices, CD-ROM, Sound Card, Laser Disc, Software for



multimedia, Components of Multimedia, Textual Information, Images, Animation, Digital Audio, Digital Video, Multimedia: Design, Production and Distribution, Planning/Design of Multimedia, Production of Multimedia, Distribution of Multimedia.

#### **UNIT-4. Applications of multimedia**

Application Areas for Multimedia, Entertainment, Edutainment, Business Communications, Knowledge Transfer, Public Access, Publishing Industries and Multimedia, Communication Technology and Multimedia Services, Multimedia in Business, Multimedia Pedagogues: Interactive Systems for Teaching and Learning, Simulations, Multimedia Composition, Multimedia and Explanatory Systems, Technological Challenge for Developers, Concepts for Distributed Learning Environment, A Medical Application: Mednet: A Medical Collaboration, and Consultation System

#### References:

01. "Cybernotary Subcommittee Home Page". Section of Science and Technology Law. <[www.abanet.org/scitech/ec/cn/home.html](http://www.abanet.org/scitech/ec/cn/home.html)>.
02. "Digital & Electronic Signatures". WTV Home page. 5Dec.1997. Winchel "Todd" Vincent, II.8Jan.2007 <[members.aol.com/Winchel3/Links/Legal/Signatures/SignaturesLegalLinks.htm](http://members.aol.com/Winchel3/Links/Legal/Signatures/SignaturesLegalLinks.htm)>.
03. Uniform Electronic Transactions Act, 23 March, 1998.
04. Employment strategy (EMP/TRENDS)-World Employment Report 2001, International Labour Organisation. Sept. 2004. 10Jan.2006 <http://www.ilo.org/public/english/employment/strat/wer2001.html>.
05. Emerging Trends in Business: Role of Government & Industry, N.Vittal, Paper presented in the IPM Seminar. Meerut. 28 Jan. 2002. 4 Jan.2007 <<http://cvc.nic.in/>>.

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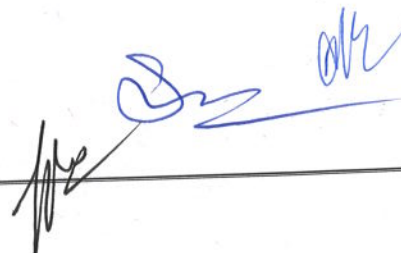
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08. The Four Digital Divides, Ed. Kenneth Keniston and Deepak Kumar. New Delhi, Sage Publishers, 2003.
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12. Fundamentals of Information Technology, Deepak Bharioke, 3/e, excel Books, 2005.
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19. Technology ,E-learning and Distance Education, Tony Bates, Routledge Falmer, 2 edition (July 19, 2005).
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21. Reinventing Government in the Information Age : International Practice in IT-enabled Public Sector Reform, Richard Heeks(Editor),Routledg,January 2001
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24. E-Government, 2003, Mark A. Abramson (Editor), Therese L. Morin (Editor)
25. E-Government in Asia: Enabling Public Service Innovation in the 21<sup>st</sup> Century, James SL Yong
26. E-Commerce – Cutting Edge of Business, Kamlesh K Bajaj, Debjani Nag, Tata McGraw Hill, 1/e, 2003.
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34. [http://wapedia.mobi/en/Embedded\\_system](http://wapedia.mobi/en/Embedded_system)
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36. Raj Kamal, "Embedded Systems", Tata Mcgraw Hill.
37. Steve Health, "Embedded Systems Design", EDN 2nd Ed
38. <http://en.wikipedia.org/wiki/HCI>
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02. Multimedia and Animation, V.K. Jain
03. Multimedia Systems by Ralf Steinmetz and Klara Nahrstedt



04. Multimedia Communications: Directions and Innovations by J D Gibson
05. Multimedia Systems, Standards, and Networks by A Puri and T Chen
06. Handbook of Multimedia Computing by Borivoje Furht
07. Multimedia Communications by Halsall
08. Quality of Service Technologies for Next Generation Networks by Tatiana Onali
09. Motion Analysis and Synthesis from Video with Multimedia Applications by Costas Panagiotakis
10. Human Perceived Quality-of-Service for Multimedia Applications by Riasat Abbas

*J. Gibson*     *A. Puri*     *B. Furht*     *T. Onali*

## Laboratory Course

Max. Marks - 50

### Lab Manual-1

- Unit-1:** Introduction to Operating System features and utilities of MS-Windows and Linux
- Unit-2:** Programming in 'C'
- Unit-3:** Word Processing
- Unit-4:** Spread Sheets

### Lab Manual-2

- Unit-1:** Presentation tools
- Unit-2:** Databases
- Unit-3:** Internet Programming
- Unit-4:** Web Page Design

### Practical Sessions

Practical sessions will be held in Computer lab, in these Computer lab, the student will have the facility to use the computer and software packages relevant to the syllabus. There are total 18 practical sessions each of 3 hours duration.

### Practical Sessions

**Total number of sessions: 18 (Each of 3 hours duration)**

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MS-Windows:	1 session
Linux:	1 session
Programming in 'C' language:	3 sessions
Microsoft Word:	4 sessions
Microsoft Excel:	3 sessions
Microsoft Power Point:	1 session
Microsoft Access:	2 sessions
Internet Programming:	2 sessions
Web Page Design:	1 session

i.e. a total of 54 hours of computer time is allotted for each student of CIT.

1 Machine will be allotted for 2 students.

A student needs to attend at least 12 out of 18 practical sessions to become eligible to appear in final practical exam in CIT.

In case, she/he appears without sufficient attendance for exam, the result may be withheld by the Govt. V.Y.T. PG Autonomous College, Durg (C.G.) and the student may be asked to take exam again after fulfilling the attendance requirements.

