

UG & UG NME Courses

THE GANDHIGRAM RURAL INSTITUTE
(Deemed to be University)
DEPARTMENT OF COMPUTER SCIENCE AND APPLICATIONS
COMPUTER COURSES FOR ALL OTHER UG COURSES

Course Code	Subject	Department	Semester	Credits	Hours		Theory		Practical		Total
					T	P	CFA	ESE	CFA	ESE	
18CSAU03A1	Computer Fundamentals and Office Automation	All UG Science [B.Sc. (Chemistry, Home Science, Textile & Fashion Technology & Geology)]	III	3+1	3	2	24	36	24	16	100
18CSAU04A1	Computer Fundamentals and Office Automation	All UG Social Science (BA GSW)	IV	3+1	3	2	24	36	24	16	100
18CSAU04A2	Computer Applications in Business	BBA	IV	3+1	3	2	24	36	24	16	100
18CSAU04A2	Computer Applications in Business	B.Com	IV	3+1	3	2	24	36	24	16	100
18CSAU03B1	Introduction to Computer and Programming in C	B.Sc (Physics)	III	3+2	3	2	24	36	24	16	100

COMPUTER FUNDAMENTALS AND OFFICE AUTOMATION- (UG Programme)										
Course Code	Department	Semester	Credits	Hours		Theory		Practical		Total
				T	P	CFA	ESE	CFA	ESE	
18CSAU03A1	All UG Sciences [B.Sc.(Chem., Home. Sci., TFD, Geology)]	III	3+1	3	2	24	36	24	16	100
18CSAU04A1	All UG Social Science	IV	3+1	3	2	24	36	24	16	100
Cognitive Level	K-1 Recall the basic definitions and terminologies of computer. K-2 Summarize the knowledge on software and hardware. K-3 Prepare documents using Office Automation Packages.									
Course Objectives	The Course aims to <ul style="list-style-type: none"> • Introduce the concepts of computer basics and terminologies. • Identify hardware, software and Operating system need for personal computer. • Provide an in-depth training with Office Automation Packages. 									

UNIT	CONTENT	No. of Hours
I	Computer concepts	11
	<ul style="list-style-type: none"> • Definition of a computer –Origin of Computer- Characteristics • Computer terminologies • Anatomy of a computer - generations of computers • Types of computers- types of operating system • Types of programming languages • Assembler - translator • Compiler – cross compiler • Discussion on recent trends and technology 	
II	Hardware devices	8
	<ul style="list-style-type: none"> • Input devices –Keyboard-mouse-pointing devices • Output devices - printers- plotters- monitors • Storage devices - Floppy – Compact disk – external Hard disk – Pen drives – Flash Drive • Source data entry devices – Digital camera – Scanners – Voice Recognition System – fax machine - microphone • Surprise test/ slip test 	
III	MS-Word	8
	<ul style="list-style-type: none"> • MS-Word: Introduction - features • Document creation - Document editing: cursor movements • Selecting text - copying text - moving text • Finding and replacing text - Spelling and Grammar • Page setup - Table creation. • Mail Merge • Test on MS word shortcut keys 	
	Lab Exercises: Preparation of Bio Data , Agenda, Minutes, Circular Letters, Letters to Various Sectors, Mail Merge, Designing a News Paper	
IV	MS-Excel	7
	<ul style="list-style-type: none"> • MS-Excel : Introduction - Advantages & applications - • Organization of workbook - Editing a worksheet - • Range - Formatting worksheet - • Chart: creation - changing type - Print options • Built-in functions. • Test on Excel Functions 	
	Lab Exercises: Preparation of Payrolls, Invoice, Stock Maintenance, Charts for Business Analysis, Use of Financial Functions.	
V	MS-Power Point	8

	<ul style="list-style-type: none"> •MS-Power Point: Introduction - features – •Creating presentation - viewing - saving and close presentation •Changing Layout - Changing Designs - Slide transition •Adding animation effects •Inserting table, charts, pictures, clipart in presentation. •Checking the creativity of Students 	
	Lab Exercises: Preparation of The Advertisement, Animation, Transition Effects, Display Board, Audio & Video Presentation	
Total Contact Hours		42

References:

1. Fundamentals of Information Technology, S.K.Bansal, A.P.H. Publishing company, New Delhi, 2002.
2. 2007 Microsoft Office System step by step, Joyce Cox, Joan Preppernau, Steve Lambert and Curtis Frye, 2007.

Course Outcomes	<p>On completion of the course, students should be able to</p> <p>CO1: Recall the fundamental concept of computer with present level of knowledge of the students.</p> <p>CO2: Recognize the purpose of operating systems, programming languages and basic peripheral devices.</p> <p>CO3: Create document in MS-Word.</p> <p>CO4: Perform the statistical calculations and draw chart using MS-Excel.</p> <p>CO5: Design presentation using MS-PowerPoint.</p>
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COMPUTER APPLICATIONS IN BUSINESS										
Course Code	Department	Semester	Credits	Hours		Theory		Practical		Total
				T	P	CFA	ESE	CFA	ESE	
18CSAU04A2	BBA	IV	3+1	3	2	24	36	24	16	100
18CSAU04A2	B.Com	IV	3+1	3	2	24	36	24	16	100
Cognitive Level	<p>K-1: Recall the basic working principles of computer</p> <p>K-2: Discuss business applications which integrate with MS-office.</p> <p>K-3: Prepare applications using MS-Word, MS-Excel and MS-PowerPoint</p> <p>K-4: Illustrate the database concepts using MS-Access.</p>									
Course Objectives	<p>The Course aims to</p> <ul style="list-style-type: none"> • Understand the basic concepts of computer operations in Business • Provide an in-depth training with Office Automation packages • Provide Database knowledge using Access. • Learn the basics of Internet basics and Internet terminologies 									

UNIT	CONTENT	No. of Hours
I	MS-WORD	8
	<ul style="list-style-type: none"> • MS-Word: Introduction - Features • Document Creation - Document Editing: Cursor Movements • Selecting Text - Copying Text - Moving Text • Finding and Replacing Text - Spelling and Grammar • Page Setup - Table Creation. • Mail Merge • Test on MS-Word Shortcut Keys 	
	Lab Exercises: Preparation of Bio Data , Agenda, Minutes, Circular Letters, Letters to Various Sectors, Mail Merge, Designing a News Paper	
II	MS-Excel	7
	<ul style="list-style-type: none"> • MS-Excel : Introduction - Advantages & Applications • Organization of Workbook - Editing a Worksheet • Range - Formatting Worksheet • Chart: Creation - Changing Type - Print Options • Built-in Functions. • Test on Excel Functions 	
	Lab Exercises: Preparation of Payrolls, Invoice, Stock Maintenance, Charts for Business Analysis, Use of Financial Functions.	
III	MS-Access	10
	<ul style="list-style-type: none"> • MS-Access : Introduction – Advantages & Applications • Store Data in a Table • Retrieve Data From a Table • Sorting, Searching in a Table • Viewing Data Using Forms • Using SQL Commands Preparation of Business Reports 	
	Lab Exercise: Preparation of Business Databases & Reports	
IV	MS-Power Point	8
	<ul style="list-style-type: none"> • MS-Power Point: Introduction – Features • Creating Presentation - Viewing - Saving and Close Presentation • Changing Layout - Changing Designs - Slide Transition • Adding Animation Effects • Inserting Table, Charts, Pictures, Clipart in Presentation. 	
	Lab Exercises: Preparation of The Advertisement, Animation, Transition Effects, Display Board, Audio & Video Presentation	

V	Internet	9
	<ul style="list-style-type: none"> • Internet Basics and Internet Terminologies • Applications of Internet- E-Mail • Applications of Internet-Usenet, Telnet, E-Commerce • Applications of Internet-World Wide Web, Video Conferencing 	
	Lab Exercises: E-Mail Creation, Ordering a Product Through Online	
Total Contact Hours		42
References:		
<ol style="list-style-type: none"> 1. 2007 Microsoft Office System Step by Step, Joyce Cox, Joan Preppernau, Steve Lambert and Curtis Frye, 2007. 2. Internet for everyone, 2/e, Alexis leon and Mathew leon, Vikaspublication, New Delhi, 2011. 		
Course Outcomes	On completion of the course, students should be able to CO1: Create documents with different formatting in MS-Word. CO2: Work with built in functions and Draw Charts using MS-Excel. CO3: Store and Retrieve data in database using MS-Access. CO4: To prepare presentations using MS-Power Point. CO5: Effective use of other internet techniques.	

INTRODUCTION TO COMPUTER AND PROGRAMMING IN C										
Course Code	Department	Semester	Credits	Hours		Theory		Practical		Total
				T	P	CFA	ESE	CFA	ESE	
18CSAU03B1	B.Sc (Physics)	III	3 + 2	3	2	24	36	24	16	100
Cognitive Level	<p>K-1 State the Algorithm development and refinement in problem solving.</p> <p>K-2 Give examples for Modular programming using sequence, selection, and repetition control structures.</p> <p>K-3 Solve programming problems using a procedural approach.</p> <p>K-4 Apply the user defined functions, arrays, pointers, structure, functions and files.</p>									
Course Objectives	<p>The Course aims to</p> <ul style="list-style-type: none"> • Enable the students to gain knowledge in programming concepts of C • Utilize sound problem solving and program design techniques to solve a large and complex problems • Implement different looping structures and conditional statements, following accepted principles of good style and program format. • Use Functions, Arrays and Pointers to write programs. 									

UNIT	CONTENT	No. of Hours
I	Structure of C Programs	9
	<ul style="list-style-type: none"> • History and Development of Computers • Need for a Programming Language- History of Programming Language • C Fundamentals: Introduction to C - Character Set • Data Types – Constants – Identifiers – Keywords • Operators and Expressions – Comment • Input and Output Functions in C 	
II	Control Statements	8
	<ul style="list-style-type: none"> • Control Statements: while , do...while, for • if...else - switch break and continue statements - go to Statement. 	
III	Functions	8
	<ul style="list-style-type: none"> • Functions: Defining a Function • Accessing a Function - Passing Arguments to a Function • Recursion 	
IV	Arrays	9
	<ul style="list-style-type: none"> • Array: Defining an Array • Processing an Array • Single Dimensional Array • Multi dimensional Array 	

V	Pointers	8
	<ul style="list-style-type: none"> • Pointers: Pointer Declaration • Passing Pointers to a Function • Dynamic Storage Allocation 	
Total Contact Hours		42

Text Book:

Programming in ANSI C, E.Balagurusamy, 5/e, Tata - McGraw Hill publishing, New Delhi, August 2010.

Reference:

Programming with C, B.S .Gottfried, Schaums outline Series, MCgraw - Hill Publishing Company, 1990.

Course Outcomes	<p>On completion of the course, students should be able to</p> <p>CO1: Apply fundamental programming concepts to solve simple problems.</p> <p>CO2: Develop skills in C programming language to implement various algorithms, and develop the basic concepts and terminology of programming in general.</p> <p>CO3: Evaluate algorithm development and ability to refine in problem solving.</p> <p>CO4: Analyze programming problems to choose appropriate programming and constructs to produce a better result.</p> <p>CO5: Identify and eliminate errors in programs</p>
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Lab Exercises:

- Programs to understand various data types application.
- Program to evaluate an expression
- Program to implement if and if else if statements
- Program to understand while, for, do while such as sum of digits
- Program using Function and Recursive function
- Program to process matrix
- Program to demonstrate pointer.

UG-NME Courses

THE GANDHIGRAM RURAL INSTITUTE
(Deemed to be University)
DEPARTMENT OF COMPUTER SCIENCE AND APPLICATIONS
COMPUTER COURSES FOR ALL OTHER
UG (NME) Courses

Course Code	Subject	Department	Semester	Credits	Hours		Theory		Practical		Total
					T	P	CFA	ESE	CFA	ESE	
18CSAU04N1/ 18CSAU05N1	Internet & Web Technology	UG-NME- All Science	IV/V	3	3	-	60	40	-	-	100
18CSAU03N1/ 18CSAU05N1	Internet & Web Technology	UG-NME- All Social Science	III/V	3	3	-	60	40	-	-	100
18CSAU04N2/ 18CSAU05N2	Computer Animation	UG-NME- All Science	IV/V	3	3	-	60	40	-	-	100
18CSAU03N2/ 18CSAU05N2	Computer Animation	UG-NME- All Social Science	III/V	3	3	-	60	40	-	-	100

INTERNET AND WEB TECHNOLOGY											
Course Code	Department	Semester	Credits	Hours		Theory		Practical		Total	
				T	P	CFA	ESE	CFA	ESE		
18CSAU04N1/ 18CSAU05N1	UG-NME- All Sciences	IV/VI	3	3	0	60	40	-	-	100	
18CSAU03N1/ 18CSAU05N1	UG-NME All Social Sciences	III/V	3	3	0	60	40	-	-	100	
Cognitive Level	K-1 Define network types, topologies and structural arrangements. K-2 Describe various graphics, animation effects and techniques using Multimedia tools. K-3 Practice to develop Web Pages using HTML. K-4 Outline the privacy, security issues and social impacts of web technology										
Course Objectives	The course aims to <ul style="list-style-type: none"> • Introduce the concept of Network, Internet and Its Applications • Make the students familiar with multimedia tools. • Gain the skills and project-based experience needed for entry into a web application and development career. 										

UNIT	CONTENT	No. of Hours
I	Information Technology	9
	<ul style="list-style-type: none"> • Information Technology Introduction • Information Systems and its Components • Types of Information Systems • IT in Business and Industries • Application areas of IT – Education, Training, CAD & CAM • Application areas of IT- Entertainment, Arts and Science • GPS (Global Positioning System)- Working Method and its Applications 	
II	Internet and Communication Technology	10
	<ul style="list-style-type: none"> • Internet basics and Internet Terminologies • Network basics and its terminologies introduction • Advantages of networks • Types of networks – WAN Structure and its Working Principle • Network topologies – Bus, Star, Ring, Tree and Mesh • Communication channels - Twisted Pair, Co-Axial and Fibre Optics • Internetworking devices - Bridges, Routers and Gateways. 	
III	Introduction to HTML	10
	<ul style="list-style-type: none"> • History of HTML- Generations • Anchor Tag - Hyper Links • Head and Body Sections: Header Section – Title - Prologue • Designing The Body Section: Aligning, Horizontal Rule, Paragraph, Tab Setting and Images & Pictures • Ordered List, Unordered List and Nested Lists • Table Creation in HTML • Example Program 	
IV	Multimedia	9
	<ul style="list-style-type: none"> • Multimedia Basics • Paint and Draw Applications of Multimedia Basics and its Applications • Various Graphics Effects and Techniques and its Variations • Sound and Music and Video Tool of Multimedia, Various Compression Techniques • Multimedia Authoring Tools Types • Various Devices Used in Delivering Multimedia • Role of Multimedia in Web Designing 	

	Personal, Social and Ethical Issues	
V	<ul style="list-style-type: none"> • Personal, Social and Ethical Issues- Computers and Operator Health • Viruses – Worms – Malware – Anti-Virus • Computer Crime Basics, Types of Crimes, Security Techniques • Cryptography – Importance, Techniques 	5
Total Contact Hours		43
Reference Books:		
<ol style="list-style-type: none"> 1. Introduction to Information Technology, ITL education solution limited, Pearson Education India, New Delhi, July 2011. 2. World Wide Web design with HTML, 13/e, C Xavier, Tata McGraw-Hill Publishing, New Delhi, 2006. 3. Fundamentals of Information Technology, 2/e, Alexis leon and Mathew leon, Vikas publication, New Delhi, 2009. 4. Internet for everyone, 2/e, Alexis leon and Mathew leon, Vikas publication, New Delhi, 2011. 		
Course Outcomes	<p>On completion of the course, students should be able to</p> <p>CO1: Understand the fundamentals of information systems and its applications</p> <p>CO2: Familiar with internet technologies.</p> <p>CO3: Utilize various multimedia tools.</p> <p>CO4: Employ various networks services.</p> <p>CO5: Know the ethical and social problems of information technology</p>	

COMPUTER ANIMATION										
Course Code	Department	Semester	Credits	Hours		Theory		Practical		Total
				T	P	CFA	ESE	CFA	ESE	
18CSAU04N2/ 18CSAU05N2	UG-NME- All Science	IV/VI	3	3		60	40	-	-	100
18CSAU03N2/ 18CSAU05N2	UG-NME- All Social Science	III/V	3	3		60	40	-	-	100
Cognitive Level	K-1 Describe the Basics of 2D & 3D animation Techniques. K-2 Practise to develop animations by using Flash action scripts. K-3 Practise to apply animation with user interface									
Course Objectives	The Course aims to <ul style="list-style-type: none"> • Enable the students with the knowledge of basics of Animation • Make the students familiar with multimedia tools. • Gain proficiency in developing animation using Flash • Familiarize the Action scripts and Event Handling. • Develop animation movies 									

UNIT	CONTENT	No. of Hours
I	Animation	8
	<ul style="list-style-type: none"> • Basics of Animation - Need for Animation-Uses of Animation • Types of Animation • Principles of Animation – Some Techniques of Animation • Animation on the WEB – 3D Animation – Special Effects • Introduction to Creating Animation. 	
II	Creating Animation in Flash	8
	<ul style="list-style-type: none"> • Introduction to Flash Animation • Introduction to Flash • Working with the Timeline and Frame-Based Animation • Working with the Timeline and Tween-Based Animation • Understanding Layers 	
III	Action script Fundamentals	10
	<ul style="list-style-type: none"> • Declaring Variables –Data Type and its Conversion • Operators and Expressions • Statements: Types of Statements-Syntax-Blocks • Conditional Statements – Loop Statements • Functions 	
IV	Events and Event Handling	11
	<ul style="list-style-type: none"> • Types of Events –Event Handling Techniques • Event Handler Properties • Listener Events-On() and On ClipEvent() Handlers- • Introduction of Objects and Classes • Movie Clips: Types of Movie Clips- Creating Movie Clips. 	
V	3d Animation	11
	<ul style="list-style-type: none"> • 3D Animation & Its Concepts – Types of 3D Animation • Skeleton & Kinetic 3D Animation • Texturing & Lighting of 3D Animation • 3D Camera Tracking • Applications & Software of 3D Animation. 	
Total Contact Hours		48
References: <ol style="list-style-type: none"> 1. Principles of Multimedia, Ranjan Parekh, 2007, TMH 2. Multimedia Technologies – Ashok Banerji, Ananda Mohan Ghosh – McGraw Hill Publication. 2011. 3. Action Script for Flash MX, Colin Moock, O’Reilly Publications, Second Edition 2001. 		
Course Outcomes	On completion of the course, students should be able to CO1: Understand the Basics of 2D and 3D Animations CO2: Apply various multimedia tools. CO3: Familiar with action script of Flash CO4: Learn the basics of 3D animations CO5: Know the advanced software for developing animation movies	