

**SYLLABUS**  
**MANONMANIAM SUNDARANAR UNIVERSITY, TIRUNELVELI-12**  
**UG - COURSES – AFFILIATED COLLEGES**  
 Course Structure for

**B.C.A**

(Choice Based Credit System)

(with effect from the academic year 2020- 2021 onwards )

<b>Semester-IV</b>				
<b>Part</b>	<b>Subject Status</b>	<b>Subject Title</b>	<b>Subject Code</b>	<b>Credit</b>
3	Core	Visual Basic	AMCA41	4
3	Core	E-Commerce	AMCA42	4
3	Core	Resource Management Techniques	AMCA43	4
3	Major Practical IV	Visual Basic Lab	AMCAP4	2
3	Allied - IV	Accounting software- Tally	AACA41	3
3	Allied Practical IV	Tally Lab	AACAP4	2
3	Skill Based core Theory II	Micro Processor	ASCA41	4
4	Non major elective	Fundamentals Of Statistics - II	ANMA42	2
4	Non major elective	Arimuga Tamil Paper - II	ANTL41	2
4	Common	Computers for Digital Era	ACDE41	2
5	Part - V	Extension Activity (NCC, NSS, YRS, YWF)	A5EA41	1



**Total Marks: 100 Internal Exam: 25 marks + External Exam: 75 marks**

**A. Scheme for internal Assessment:**

Maximum marks for written test: **20 marks**

**3 internal tests**, each of **1 hour** duration shall be conducted every semester.

To the average of the **best two** written examinations must be added the marks scored in. The **assignment** for 5 marks.

The break up for internal assessment shall be:

Written test- 20 marks; Assignment -5 marks Total - 25 marks

**B. Scheme of External Examination**

**3 hrs.** examination at the end of the semester

A – Part : 1 mark question two - from each unit

B – Part : 5 marks question one - from each unit

C – Part : 8 marks question one - from each unit

➤ **Conversion of Marks into Grade Points and Letter Grades**

S.No	Marks	Letter Grade	Grade point (GP)	Performance
1	90-100	O	10	Outstanding
2	80-89	A+	9	Excellent
3	70-79	A	8	Very Good
4	60-69	B+	7	Good
5	50-59	B	6	Above Average
6	40-49	C	5	Pass
7	0-39	RA	-	Reappear
8	0	AA	-	Absent

➤ **Cumulative Grade Point Average (CGPA)**

$$CGPA = \frac{\Sigma (GP \times C)}{\Sigma C}$$

- **GP** = Grade point, **C** = Credit
- CGPA is calculated only for Part-III courses
- CGPA for a semester is awarded on cumulative basis

➤ **Classification**

- First Class with Distinction :  $CGPA \geq 7.5^*$
- First Class :  $CGPA \geq 6.0$
- Second Class :  $CGPA \geq 5.0$  and  $< 6.0$
- Third Class :  $CGPA < 5.0$



# VISUAL BASIC

## COURSE OBJECTIVES:

- To study properties and events, methods of controls and how to handle events of different controls.
- To understand the use of active controls and how to design VB application.
- To study connectivity between VB and databases.

## UNIT – 1

### GETTING STARTED WITH VISUAL BASIC 6.0

Introduction to Visual Basic, Visual Basic 6.0 Programming Environment, Working with Forms, Developing an Application, Variables, Data types and Modules, Procedure and Control Structures, Array in Visual Basic, Additional examples. Working with Controls: Introduction, Creating and Using Controls, Working with Control Arrays, Additional examples.

## UNIT – 2

### MENUS & GRAPHICS

Menus, Mouse Events and Dialog Boxes: Introduction, Mouse Events, Dialog Boxes, Additional examples. Graphics, MDI and Flex Grid: Introduction, Graphics for Applications, Multiple Document Interface (MDI), Using the flex Grid Control, Additional examples.

## UNIT - 3

### OPEN DATABASE CONNECTIVITY

ODBC and Data Access Objects: Evolution of Computer Architecture, Data Options, Additional examples. ODBC Using Data Access Objects and Remote Data objects: Open Database Connectivity (ODBC), Remote Data objects, Additional examples.

## UNIT – 4

### REPORT CREATION

Data Environment and Data Report: Introduction, Data Environment Designer, Data Report, Additional examples. Object Linking and Embedding: Introduction, OLE Fundamentals, Using OLE Container Controls, Using OLE Automation Objects, OLE Drag and Drop, Additional examples.

## UNIT – 5

### ACTIVE X CONTROLS

Built – in Active X Controls: Working with Built – In Active X Controls, Additional examples. Working with Active X Data objects; An Overview of ADO and OLE DB, ADO Object Model, Additional examples. Files, and File System Controls: Introduction, File System Controls, Accessing Files, Interface with Windows, Additional examples.



**COURSE OUTCOMES:**

- Demonstrate knowledge of programming terminology and how applied using Visual Basic (e.g., variables, selection statements, repetition statements, etc.).
- Develop a Graphical User Interface (GUI) based on problem description.
- Develop an Event Planning Chart based on problem description so as to define the processing that is to occur based on specific events.

**TEXT BOOK:**

1. Visual Basic 6.0 Programming – Content Development Group – Tata McGraw hill Publishing Company Limited, New Delhi. (Chapters 1,2,3,4,5,6,7,8,9,13,16,17)

**REFERENCE BOOKS:**

1. Microsoft Visual Basic 6.0 Professionals - Michael Halvorson – PHI.
2. Visual Basic 6 in Record Time - Steve Brown, BPB Publications.
3. Visual Basic 6 from the Ground UP – Gary Cornell - Tata McGraw hill.



## **CORE SUBJECT – II**

### **E – COMMERCE**

#### **COURSE OBJECTIVES**

- To provide adequate basic understanding about Management Education among the students.
- To prepare students to exploit opportunities being newly created in the Management Profession.
- To train the students in communication skills effectively.

#### **UNIT – 1**

##### **INTRODUCTION**

What is Electronic Commerce? – Types of Electronic Commerce Technology

#### **UNIT – 2**

##### **MODELS AND TYPES**

Types of E-Business Models and Markets - Types of E-Commerce Providers and Vendors E- Commerce website Creation.

#### **UNIT – 3**

##### **E-COM WEB DEVELOPMENT**

Managing E-Commerce website Development – Building Shopping Cart Applications – Mobile Electronic Commerce.

#### **UNIT – 4**

##### **E-COM DATABASES**

Enhancing a web server with E-Commerce Application Development – Strategies, Techniques and tools – Implementing Merchandising Strategies – Implementing E-Commerce Databases.

#### **UNIT - 5**

##### **E-COMMERCE APPLICATIONS**

Applying and Managing E-Business Intelligence Tools for Application Development – Types of Security Technologies – protocols for the Public Transport of Private Information.

- **COURSE OUTCOMES:**
- Design and implement an e-commerce application with a shopping cart.
- Integrate the waterfall model in the development of e-commerce applications.
- Integrate user-centered design guidelines in developing user-friendly websites.



**TEXT BOOKS:**

1. Electronic Commerce - Pete Loshin and John Vacca, Fourth edition, Firewall Media, New Delhi, 2006.
1. E-Business - Parag Kulkarni, Sunita Jahirabadkar, and Pradip Chande, Oxford University Press, 2013.

**REFERENCE BOOKS:**

2. Electronic Commerce - Gary O.Schnelder James T.Perry, First edition, Thomson Learning 2000.
3. Electronic Commerce - Elias M.Awad, Prentice Hall of India 2002.



## **CORE SUBJECT – III**

### **RESOURCE MANAGEMENT TECHNIQUES**

#### **COURSE OBJECTIVES**

- To solve optimization problems using simplex method.
- To learn to solve problems in linear programming and Integer programming.
- To use PERT and CPM for problems in project management.

#### **UNIT – 1**

##### **LINEAR PROGRAMMING I**

Introduction – Advantages and disadvantages of LP – Basic characteristics of LP – General linear Programming problem – Algebraic solution of a LP (Simplex Method).

#### **UNIT - 2**

##### **ASSIGNMENT PROBLEM**

Introduction – Definition and Mathematical formulation – Methods of solutions – Application area of AP – Comparison between AP and TP – Basic theorems – Hungarian method – Exceptional cases of AP – AP with restrictions – Multiple optimal solution of an AP.

#### **UNIT – 3**

##### **JOB SEQUENCING & NETWORK MODEL PROBLEMS**

Introduction, Basic terms and Notations used in Sequencing – Priority sequencing rules – Gantt Chart – Types of Job sequencing problems. Network models: Introduction – Basic features of Network models – Main advantages of Network models – Network models – Minimum spanning tree algorithm – Shortest route problem – Maximum flow and minimum cost flow problems – Travelling salesman problem as a network model – Unifying model: Minimum cost flow network – Linear programming approach to a network model.

#### **UNIT - 4**

##### **PROJECT MANAGEMENT**

Introduction – Basic concepts – Project planning techniques – CPM & PERT techniques – Critical path method – The PERT approach – Expected length of a project - Probability of project completion by due date – cost consideration in project scheduling – similarities and differences in CPM & PERT.

#### **UNIT – 5**

##### **GAME THEORY**

Introduction – Definitions and Terminology – Basic game theory models – Fundamental Principles of game theory – Assumptions underlying game theory – Pure strategies: Games with saddle point – The rules of Dominance – mixed strategies: Games without saddle point – Solution of  $2 \times n$  and  $m \times 2$  Games (graphical approach) – Linear programming solutions of Games. Inventory control: Fundamentals of



Inventory theory – Basic terminology – Advantages &disadvantages of Inventory – formula for the quantity to order and lead time – EOQ with price-breaks.

**COURSE OUTCOMES:**

- Make use of simplex method to solve optimization problems.
- To find solution for various shortest route problems.
- Utilize PERT and CPM in project management.

**TEXT BOOK:**

1. Operations Research Models & Methods – Chandrasekhar Salimath, Bhupender parashar – Universities press 2014.

**REFERENCE BOOKS:**

1. Operations Research – Nita H.Shah , Ravi M. Gor, HardikSoni – PHI Learning Private Limited, New Delhi, 2009.
2. Operations Research – P.K.Gupta, Dshira, Schand, 2015.
3. Operations Research – H. A Taha, 9th Edition, Pearson, 2014





## **ALLIED – IV**

### **ACCOUNTING SOFTWARE – TALLY**

#### **COURSE OBJECTIVES:**

- This course is designed to impart knowledge regarding concepts of Financial Accounting Tally is an accounting package which is used for learning to maintain accounts.
- As this course is useful for Commerce and computer students to get placements in different offices as well as companies in Accounts departments.

#### **UNIT – 1**

##### **CREATING COMPANY IN TALLY**

Creating Accounting and Inventory Ledger - creating stock item group, category, pos – Trial balance - Final accounts with adjustments.

#### **UNIT – 2**

##### **VALUES ADDED TAX**

Values added Tax – VAT Rate – VAT classification – VAT composition Report – VAT composite returns – Voucher entry.

#### **UNIT – 3**

##### **TDS, TCS, ST**

Features of TDS – TDS Deduction for advance payment & Balance payment – TDS computation report – TCS report Service Tax Reports.

#### **UNIT – 4**

##### **EXCISE DEALER**

Dealer Excise report – Excise stock register – Bank Reconciliation statement – Ledger creation and effective Date for Reconciliation.

#### **UNIT – 5**

##### **PAYROLL**

Payroll info - pay heads –employee groups – salary- unit of a attendance – pay sheet report – payslip pay roll statement – payroll with PF and ESI.

#### **COURSE OUTCOMES:**

- Company Setup & Configurations.
- Charts of Accounts Setup.
- Recording Financial Transactions.
- Financial Reports Analysis.



**TEXT BOOK :**

1. Accounting Package Tally 9.0 – A.K. Nanthini, Himalaya Publications, 2008.

**REFERENCE BOOK:**

- 1) Tally 9.0 by Dr. Namrata Agrawal, Professor, NIFS.



## **SKILL BASED CORE THEORY MICROPROCESSOR**

### **COURSE OBJECTIVES:**

- To study about microprocessor Architecture.
- To learn about basic 8085 microprocessor and its operations and applications.
- To do arithmetic manipulations using 8085 processor.

### **UNIT – 1**

#### **MICROPROCESSORS, MICROCOMPUTER AND ASSEMBLY LANGUAGE**

Microprocessors – Microprocessors Instruction set and Computer Languages – Computers to single chip microcontrollers. Mention to 8085 assembly language Programming – The 8085 Programming model action Classification – Instruction, data format and storage – How to write, store and execute simple program, Overview of 8085 instruction set.

### **UNIT – 2**

#### **MICROPROCESSOR ARCHITECTURE AND MICRO COMPUTER SYSTEMS**

Microprocessor Architecture and its operations – Memory – Input and Output (I/O) – Example of a Micro Computer System. Microprocessor Architecture and Memory interfacing: The 8085 MPU – Example 8085 based microcomputer - Memory interfacing - Interfacing the 8155 memory.

### **UNIT – 3**

#### **DATA TRANSFER OPERATION**

Arithmetic operations – Logic operations – Branch operations - Writing assembling Language programs – Debugging a program. Programming techniques with additional Instruction: Programming techniques – Counting and Indexing – Additional data transfer and 16-bit arithmetic operations – Arithmetic operations related to memory - Logic operations related to memory - Logic operations – Rotate – Dynamic debugging.

### **UNIT - 4**

#### **COUNTERS AND TIME DELAYS**

Counters Time Delays – Hexa decimal counter. Modulo ten counter – Pulse Wave forms – Debugging counter and time Delay programs. Subroutine: Stack – Subroutine – Restart – Conditional call and Return subroutine concepts.

### **UNIT – 5**

#### **CONVERSIONS**

BCD to Binary conversion – Binary to BCD conversion - BCD to seven segment. LED code conversion – BCD addition – BCD Subtraction – Multiplication-Subtraction with carry.



**COURSE OUTCOMES:**

- To write programs to run on 8086 microprocessor-based systems.
- Design system using memory chips and peripheral chips for 16-bit 8086 microprocessor.
- Understand and devise techniques for faster execution of instructions, improve speed of operations and enhance performance of microprocessors.

**TEXT BOOKS:**

1. Ramesh S. Goanker - Microprocessor Architecture Programming and Applications with the 8085 – 5th Edition, Penram International Publisher 2000.
2. Microprocessor and Microcontrollers N. Senthil Kumar, M. Saravanan, S. Jeevananthan. Oxford University Press, 2016

**REFERENCE BOOK:**

1. 8085 Microprocessor Programming and Interfacing - N.K.Srinath, PHI Publication, 2005.



## **PRACTICAL LIST**

1. Design a Desktop Calculator
2. Design of a Color Mixer using basic colors.
3. Create an application to format text inside a text box.
4. Create an application using File controls and use two option buttons to show and hide a picture in the picture box.
5. Create an application to do Matrix Addition using Flex Grid Control.
6. Create an Editor with File and Edit menus using Menu Editor Tool.
7. Create an MDI application with tile and cascade child forms.
8. Create an application to implement OLE Drag and Drop.
9. Create a mailing address database in Access and view the records using Data Control.
10. Create a student database in Access and prepare a Report using Data Report Control.



## **TALLY LAB [ACCOUNTING PACKAGE]**

### **PRACTICAL LIST**

- 1(a). Develop a purchase day book as your own data
- (b). Create a sales daybook as your imaginary figures
- (c). Give a format of a petty cash book with your own figure
- (d). Prepare an invoice book with your own figure
2. With the following particulars, prepare a trail balance:
3. Prepare a proper Subsidiary book and do the transactions with your own data
4. Prepare a Petty Cash book with your own data
5. Prepare a Balance Sheet of a Software company with your own data
6. Prepare Sales invoice of a medical store with your own data



# FUNDAMENTALS OF STATISTICS II

## **Objectives:**

- To know the concept of attributes.
- To study index numbers and simple problems.

## **Course Learning Outcomes:**

It enables the students to

- realise the importance of curve fitting.
- calculate different types of index numbers.

## **UNIT – I**

Theory of attributes – two attributes.

## **UNIT – II**

Index number - weighted index number.

## **UNIT – III**

Consumer Price index number - conversion of index number .

## **UNIT – IV**

Time series - measurement of trends.

## **UNIT – V**

Curve fitting – Straight line – Parabola - Exponential curve.

## **Text Book:**

Dr. S. Arumugam, A.Thangapandi Issac- Statistics, New Gamma Publishing House, Palayamkottai (2016).

## **Books for Reference:**

1. S. P. Gupta - Elementary Statistical Methods, Sultan Chand & Sons,2017).
2. T. Veerarajan Fundamentals of mathematical Statistics, Yes Dee Publishing Pvt.Ltd.Edition . (2017)



தமிழ்மொழியை அறியாத மாணவர்க்குரிய பாடத்திட்டம்

## நான்காம் பருவம் அறிமுகத்தமிழ் - தாள் 2

இவ்விரு தாள்களும் தமிழ் மொழியைப் பயிலாத மாணவர்களுக்குப் பொதுவிருப்பப்பாடத் தேர்வு முறைப்படி (Choice Based Credit System) துறைசாரா விருப்பப்பாடத் திட்டத்தின் அடிப்படையில் தமிழ் மொழியினைக் கற்கும்வகையில் எளிமையுடன் அமைக்கப்பட்டுள்ளது. பிறமொழியினைத் தாய்மொழியாகக் கொண்டு கல்வி கற்கும் மாணவருக்குத் தமிழ் மொழியினை அறிமுகப்படுத்தும் வகையில் தமிழ் எழுத்துக்கள் அறிமுகப்படுத்தப்பட்டுள்ளன. மாணவர்களின் எழுதும் திறனும், பேசும் திறனும் சிறப்பாக அமைய கையெழுத்துப் பயிற்சியும், வாய்மொழிப் பயிற்சியும் இன்றியமையாதனவாகக் கருதப்படுவதால், அப்பயிற்சி பெறும் வகையில் பாடங்கள் வகுக்கப்பட்டுள்ளன. மேலும் மாணவரின் அறிவு மேம்படும் வகையிலும் தமிழ்மொழியைக் கற்கத் தூண்டும் வகையிலும் மொழித்திறன் பயிற்சியும் அமைந்துள்ளது.

பொருளடக்கம்

அலகு - 1 – செய்யுள் பகுதி

அலகு - 2 – கதை வாசித்து கதை சொல்லல், விடைகூறல், எழுதுதல்

அலகு - 3 – பொதுக்கட்டுரை

அலகு - 4 – சொற்பொருள் அறிதல்

அலகு - 5 – மொழித்திறன் பயிற்சி

இந்த பாடத்திட்டத்திற்றினாக பாடங்கள் மற்றும் மாதிரி வினாக்கள் அடங்கிய கையேடு பல்கலைக்கழக இணையதளத்திலிருந்து பதிவிறக்கம் செய்து கொள்ளலாம்.





# COMPUTERS FOR DIGITAL ERA

(For the IV Semester UG/ Integrated PG Students of Departments and Affiliated Colleges of Manonmaniam Sundaranar University with effect from the Academic Year 2017-18.)

## Objectives:

1. To create the awareness about the digital India among the student community.
2. To make the student to understand the role of computer in the day to day living.
3. To create the awareness about the e-learning and security issues.

## Unit I

### FUNDAMENTALS OF COMPUTERS

The role of computers in the modern society – Types of Computers and their specifications – Server – Desk Top Computers - Lap Top – Tablet – Smart Phones - Block diagram of Digital Computer –Working Principle of Computer, I/O Devices – Central Processing Unit – Types of Memory - Display – Port – UPS – Setting up and Maintenance of Computer.

## Unit II

### TYPES OF SOFTWARE AND OFFICE AUTOMATION

Types of Software with examples – System Software – Application Software – Utility Software - Operating System – Basics on Windows – Introduction to Android –Application Software - Free Open source software – Database and its applications – Office Automation Software – applications of Microsoft Word – Microsoft Power Point – Microsoft Excel.

## Unit III

### INTERNET AND MOBILE APPLICATIONS

Introduction to computer networks – LAN – WAN – MAN – Wired and wireless network – Wi Fi Networks - Network Devices – Modem – Switch – Router – Broad Band – Leased Lines- Internet – WWW – URL- Browser – e-mail – SMS – MMS - Client Server Computing - Cloud – Public and Private cloud – Mobile Applications.

## Unit IV

### E – GOVERNANCE IN INDIA

E-Governance initiative by the Government – Digital India Platform – Agencies enabling Digital India - Electronic Payment and Receipt – Digital



Locker – e-district service – electronic signature service – Digital AIIMS – India BPO Scheme – Integrated Nutrient Management – GIS – Mobile Seva App Store- GARV- Grameen Vidyutikaran

## **Unit V**

### **E – LEARNING AND MOOC**

E – Learning – Digital Library – E- Journals – Introduction to MOOC – Edex – Course era etc - SWAYAM – NPTEL – Cyber Security – Virus – Malware – Network Security - Hacking – Big Data – Data Analytics – Social Networks – Social Media Analytics- Introduction to IT Act.

### **➤ 10 Hours Practical Sessions are to be allotted for Computer & Mobile Applications**

#### **Suggested List of Exercises:**

1. Setting up of computers – Connecting I/O device, UPS, CPU, Printers, Mouse, Key Boards, Pen Drives, etc. (Mandatory)
2. Minor fault findings.
3. Preparing a word Document and saving, copying files, deleting files, renaming files, etc. (Mandatory)
4. Preparing slides – Animation – Slide Transition – Back Ground Changing – Word Art , etc. (Mandatory)
5. Preparing Mark Sheet with Excel - Calculating First Class, second class, etc. (Mandatory)
6. Browsing – Searching for documents – e-mail id creation - Useful mobile apps – downloading. (Mandatory)
7. Data/Wi-Fi Connectivity and Exchanging of Data.
8. Electronic Payment – Online Application Processing
9. Browsing for NPTEL/ SWAYAM Courses
10. Browsing the useful e-learning sites

#### **Learning Outcomes:**

At the end of the course the students will be able to:

1. apply the computing technology in their day to day life
2. create awareness regarding digital India initiatives to their surroundings
3. identify the areas where he can extend the digital computing for their benefits.



**Text Book:**

1. E- Materials of Manonmaniam Sundaranar University on “Computer for Digital Era”, <http://msuniv.ac.in>

**References:**

1. Andrew S. Tanenbaum, Computer Networks, 4th Edition, Eastern Economy Edition, PHI Private Ltd, New Delhi, 2003.
2. Gautam Shroff, Enterprise Cloud Computing, Technology, Architecture, Applications, Cambridge University Press, First Edition, 2010.
3. Reza B'Far, Mobile Computing Principles, Cambridge University Press, First Edition, 2005.
4. Charles P Pfleeger, Shari Lawrence Pfleeger, Security in Computing, I Edition, Pearson Education, 2003.
5. <https://swayam.gov.in>
6. <http://www.digitalindia.gov.in/content/social-media-analytics>

Scheme of Examination	
Internal – 25 Marks	External – 75 Marks
Internal Break Up - 15 for Continuous Assessment Test (CAT) + 5 for Assignment + 5 for Seminar. 3 CATs ( Two tests on Theory and one on Practical )are to be conducted	

