SYLLABUS

DR. VISHWANATH KARAD
MIT - WORLD PEACE UNIVERSITY

FACULTY OF MANAGEMENT- UG

BACHELOR OF BUSINESS ADMINISTRATION

Computer Application

BATCH – 2019-2022
PROGRAMME STRUCTURE

Preamble:

- BBA (CA) is a three-year Nine Trimester full time programme designed to give rise to "future professionals" rather than mere 'degree holders'.
- BBA (CA) programme is meant to heighten technological know-how, to train students to become industry specialists, to provide research-based training and to encourage Software development.
- This program aims to shape computer professionals with the right moral and ethical values and can prepare students to face the challenges and opportunities in the IT industry by building strong foundations.
VISION AND MISSION OF THE PROGRAMME

VISION:
- To be an innovative, vibrant and acclaimed premier educational program engaged in promoting and grooming talents through our recital, our people and commitment to our core values, thereby producing enduring learners who are able to compete globally.
- To be a world leader in computer education, research and engagement, helping to create a better knowledge society.
- To ensure that every student gets the best opportunity to build career.
- To build the culture of research, innovation & excellence while being firm on Values.

MISSION:
- To provide high-quality, affordable and accessible educational programmes, which will enhance the quality of the human resources available to the job markets.
- To empower students to be successful by helping them develop the knowledge, skills and abilities needed to enter or progress within the work force and to adapt and thrive in our increasingly diverse and ever-changing world through continuous learning.
- Offering the best professional development and career management opportunities for our students.
- Committing to continuous improvement through stakeholder engagement, industry relations, and assurance of learning across all programs.

PROGRAMME EDUCATIONAL OBJECTIVES

BBA (CA) is a 3 years full time professional credit based course designed to bridge the gap between the industry and the academia. The programme offers courses which are a blend of management, commerce and computer applications. This course aims at inculcating essential skills as demanded by the global software industry through interactive learning process. The curriculum has been designed to cater to the ever-changing demands of information technology along with necessary inputs from the Industry. BBA (CA) course is meant to heighten technological knowhow, to train students to become industry specialists, to provide research-based training and to encourage software development.
PROGRAMME SPECIFIC OUTCOMES

1. To provide sound academic base from which an advanced career in Computer Application can be developed.
2. To provide basic understanding about Commerce and Management Education among the students.
3. To develop academically competent and professionally motivated personnel, equipped with objective, critical thinking, right moral and ethical values that compassionately foster the scientific temper with a sense of social responsibility.
4. To develop students to become globally competent.
5. To inculcate entrepreneurial skills among students.

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Dean, Management (UG)
PROGRAMME STRUCTURE:

(a) PROGRAMME DURATION: 03 years full time course

(b) SYSTEM FOLLOWED: Trimester pattern

(c) CREDIT SYSTEM:

<table>
<thead>
<tr>
<th>Sr No</th>
<th>Year</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>First Year</td>
<td>40</td>
</tr>
<tr>
<td>2</td>
<td>Second Year</td>
<td>38</td>
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<td>3</td>
<td>Third Year</td>
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</tr>
<tr>
<td>4</td>
<td>Additional Credit Programmes</td>
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</tr>
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</table>

Total Credits 129

(d) CREDITS FOR ACTIVITIES OTHER THAN ACADEMICS:

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Year</th>
<th>Particulars</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>First Year</td>
<td>Certification Course 1</td>
<td>03</td>
</tr>
<tr>
<td>2</td>
<td>Second Year</td>
<td>Certification Course 2</td>
<td>03</td>
</tr>
<tr>
<td>3</td>
<td>Third Year</td>
<td>Certification Course 3</td>
<td>03</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>09</td>
</tr>
</tbody>
</table>

(e) ASSESSMENT CRITERIA:

Pattern of Examination:
The evaluation scheme comprises of:
a) University Evaluation
b) Concurrent Evaluation
For each credit course –
a) 50 marks shall be evaluated by the University and
b) 50 marks shall be evaluated on the basis of Concurrent evaluation.

Passing Criteria:
As per MIT-WPU norms.
(h) MANDATORY ATTENDANCE TO APPEAR FOR EXAMINATION: 75%

1. It is obligatory on the part of the student to attend each and every Lecture, Tutorial, and Laboratory practical sessions in a course for the academic excellence. However, on account of late registration or illness or any other contingencies, the attendance requirement will be a minimum of 75% of the classes scheduled/ held.

2. In case of extraordinarily genuine cases, the requirement of attendance can be further condoned up to 15% by the Executive President/Vice-Chancellor on the recommendations of the Head of the Department concerned. An application on prescribed format for condoning limited shortage of attendance (up to 15% only) should be made by the student at least one week prior to the examination.

3. Any candidate who fails to meet the attendance criteria indicated as above in any course shall not be allowed to take the Midterm/ End term examination of that course unless he/she fulfills the minimum attendance criteria.

4. The attendance records will be announced/ displayed periodically to sufficiently warn the students who are falling short of attendance.

5. The final attendance records for the entire trimester /semester / one year will be displayed by the respective faculty/course instructor handling a course, with the approval of the Heads of Departments (Principal/Director), before the last day of classes in the current trimester /semester / one year, or on the date as mentioned in the Academic Calendar.

(i) MEDIUM OF INSTRUCTION AND EXAMINATION:

i. Medium of Instruction: English.

ii. Examination:

   Pattern of Examination:
   The evaluation scheme comprises of:
   a) University Evaluation
   b) Concurrent Evaluation

   For each credit course –
   a) 50 marks shall be evaluated by the University.
   b) 50 marks shall be evaluated on the basis of Concurrent evaluation.

(k) ELIGIBILITY CRITERIA FOR ADMISSION TO THE PROGRAMME

Eligibility for Admission -

In order to be eligible for admission to Bachelor of Business Administration - Computer Application candidate must have passed.

a) HSC (10+2) from any stream with English as passing Subject with minimum 50% marks in aggregate.
b) Two years/three years Diploma of Board of Technical Education, conducted by Government of Maharashtra or its equivalent.

c) MCVC.
A. Definition of Credit:-

<table>
<thead>
<tr>
<th>Lectures per Programme</th>
<th>Credits</th>
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<tbody>
<tr>
<td>45</td>
<td>3</td>
</tr>
<tr>
<td>30</td>
<td>2</td>
</tr>
</tbody>
</table>

B. Credits:-

Total number of credits for three year undergraduate BBA Computer Application Programme would be 129.

C. Structure of Credits for Undergraduate BBA Computer Application programme:-

Total number of credits for Three year undergraduate Programme would be 129

d) Credits System

e)

<table>
<thead>
<tr>
<th>SR. NO.</th>
<th>YEAR</th>
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<tbody>
<tr>
<td>1</td>
<td>FY BBA (CA)</td>
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<td>3</td>
<td>TY BBA (CA)</td>
<td>42</td>
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<td>4</td>
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<td>09</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td><strong>129</strong></td>
</tr>
</tbody>
</table>

(d). Credits for activities other than academics
In addition, every student will also complete the following

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
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<td>3</td>
<td>Certification Course 3</td>
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<tr>
<td>TOTAL</td>
<td></td>
<td><strong>09</strong></td>
</tr>
</tbody>
</table>

Dr. Kalyan Swarup
Dean, Management (UG)
D. **Course Code and Definition:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td>Lecture</td>
</tr>
<tr>
<td>P</td>
<td>Practical</td>
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<tr>
<td>WP</td>
<td>Peace Programs</td>
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</table>

E. **Grading Scheme:**

The marks shall be converted to grade points and grades using Table-I:

**Table-I: Points Grading System**

<table>
<thead>
<tr>
<th>Marks Out of 100</th>
<th>Grade</th>
<th>Grade Point</th>
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</thead>
<tbody>
<tr>
<td>80-100</td>
<td>O: Outstanding</td>
<td>10</td>
</tr>
<tr>
<td>70-79</td>
<td>A+: Excellent</td>
<td>9</td>
</tr>
<tr>
<td>60-69</td>
<td>A: Very Good</td>
<td>8</td>
</tr>
<tr>
<td>55-59</td>
<td>B+: Good</td>
<td>7</td>
</tr>
<tr>
<td>50-54</td>
<td>B: Above Average</td>
<td>6</td>
</tr>
<tr>
<td>45-49</td>
<td>C: Average</td>
<td>5</td>
</tr>
<tr>
<td>40-44</td>
<td>Pass</td>
<td>4</td>
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<tr>
<td>0-39</td>
<td>Fail</td>
<td>0</td>
</tr>
<tr>
<td>AB</td>
<td>Absent</td>
<td>NA</td>
</tr>
</tbody>
</table>

The performance of a student will be evaluated in terms of two indices, viz.

a) **Trimester Grade Point Average (TGPA)** which is the Grade Point Average for a trimester.

b) **Cumulative Grade Point Average (CGPA)** which is the Grade Point Average for all the completed trimesters at any point in time.

**Trimester Grade Point Average (TGPA):**

At the end of each trimester, TGPA is calculated as the weighted average of GPI of all courses in the current trimester in which the student has passed, the weights being the credit values of respective courses.

TGPA = \( \frac{\text{Grade Points}}{\sum C_i} \)

Where \( C_i \) is the number of credits of the \( i \)th course and \( G_i \) is the grade point scored by the student in the \( i \)th course.

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Cumulative Grade Point Average (CGPA): Cumulative Grade Point Average (CGPA) is the grade point average for all completed trimesters. CGPA is calculated as the weighted average of all GPA of all courses in which the student has passed up to the current trimester.

Cumulative Grade Point Average (CGPA) for the Entire Course

\[ CGPA = \frac{\sum (C_i \cdot S_i)}{\sum C_i} \]

Where \( S_i \) is the SGPA of the \( i \)th trimester / semesters / one year and \( C_i \) is the total number of credits in that trimester / semesters / one year.

The GPA and CGPA shall be rounded off to 2 decimal points and reported in the transcripts.
### BBA Computer Application (First Year) (Batch 2019-2022)

<table>
<thead>
<tr>
<th>Trimester 1</th>
<th>Trimester 2</th>
<th>Trimester 3</th>
</tr>
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<tbody>
<tr>
<td>Sr. No.</td>
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<tr>
<td>BBC101A</td>
<td>Computer Fundamentals</td>
<td>03</td>
</tr>
<tr>
<td>BBC102A</td>
<td>Business Communication and Personality Development</td>
<td>03</td>
</tr>
<tr>
<td>BBC103A</td>
<td>Business Mathematics</td>
<td>03</td>
</tr>
<tr>
<td>BBC104A</td>
<td>Programming Principles and Algorithms</td>
<td>03</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other Courses</td>
<td></td>
</tr>
<tr>
<td>PC1</td>
<td>World Famous Philosophers, Sages, Saints and Scientists</td>
<td>02</td>
</tr>
<tr>
<td></td>
<td>TOTAL 14</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TOTAL CREDITS FOR FYBBA (CA) – 14+12+14= 40</td>
<td></td>
</tr>
</tbody>
</table>
BBA(Computer Application) COURSE STRUCTURE

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Dean, Management (UG)
COURSE STRUCTURE Trimester I

<table>
<thead>
<tr>
<th>Course Code</th>
<th>BBC101A</th>
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<tbody>
<tr>
<td>Course Category</td>
<td>Compulsory Subject</td>
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</table>

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Computer Fundamentals</th>
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</thead>
<tbody>
<tr>
<td>Teaching Scheme and Credits</td>
<td>L</td>
</tr>
<tr>
<td>Weekly load hrs.</td>
<td>6</td>
</tr>
</tbody>
</table>

**Pre-requisites:** Knowledge of computers is not a prerequisite to follow the contents of this tutorial. This tutorial assumes no background in Computers or Computer programming.

**Course Objectives:**

1. **Knowledge**
   (i) To understand concepts of Computer Fundamentals in respect of:
   (ii) Give you a general understanding of how a computer works
   (iii) Introduce you to assembly-level programming
   (iv) Prepare you for future courses.
   (v) Learn different phases or generations of computers and improvement per generation

2. **Skills**
   (i) How to use personal computer.
   (ii) Basic knowledge of inbuilt programs.
   (iii) Knowledge of all programming languages: Assembly, Low level, High Level
   (iv) Hands on skills in Applications software like Ms office
   (v) Learn how to use internet and other tools for professional work

3. **Attitude**
   To develop following:
   (i) Good technical background to learn programming languages
   (ii) Awareness of Operating system
   (iii) Digital and electronic communication

**Course Outcomes:**

1. Fundamental knowledge of computers will prepare students to learn advance concept and high level programming languages. Practical knowledge of application programs like Ms Word, PowerPoint, and Excel will help them to outshine in their professional carrier.

**Course Contents:**

- **The Computer System Hardware**: Introduction, Central Processing Unit, Memory Unit, Interconnecting the units of a computer, Instructions Format, Set & Cycle
- **Computer Memory**: Introduction, Memory Representation, Memory Hierarchy, CPU Registers, Cache Memory, Primary & Secondary Memory, Access Types of Storage Devices, Magnetic Tape & Discs, Optical Discs, Using Computer Memory
- **Data Communication & Computer Network**: Introduction, Importance of Networking, Data Transmission Media, Data Transmission Across Media, Data Transmission & Data Networking

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Computer Network Wireless Networking

**Laboratory Exercises / Practical:** Yes

**Learning Resources:**

**Text Book:**
B1: Computer Fundamentals; Anita Goel, Pearson, 2017

**Reference Books:** Computer Fundamentals with Ms Office Applications; Saravanan, Paperback – 2008

**Supplementary Reading:**

**Web Resources:**


**MOOCs:** [https://gradeup.co/notes-on-computer-fundamental-i-324242b2-d967-11e5-be7b-4cda88ef8eae](https://gradeup.co/notes-on-computer-fundamental-i-324242b2-d967-11e5-be7b-4cda88ef8eae), [https://www.edutechlearners.com/computer-fundamentals-p-k-sinha-free-pdf/](https://www.edutechlearners.com/computer-fundamentals-p-k-sinha-free-pdf/)

**Pedagogy:**

Case studies, Videos on related topics, practical demonstration of hardware devices, Lab sessions on application software

**Assessment Scheme:**

Internal evaluation of each subject will be for 200 marks (which will be converted to 50 marks); divided as follows:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mid Term Examination</td>
<td>50</td>
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<tr>
<td>Attendance and Class Participation</td>
<td>50</td>
</tr>
<tr>
<td>Assignments</td>
<td>50</td>
</tr>
<tr>
<td>Presentations/ Practical/ Viva/Project</td>
<td>50</td>
</tr>
<tr>
<td>Total Marks</td>
<td>200</td>
</tr>
</tbody>
</table>

**Term End Examination:** (50 marks)

Prepared By
Prof. Gautam Bapat

Checked By
Prof. Geetika Parmar

Approved By
Prof. Shalaka Ghodke

Chairman, Board of Studies
Dr. Kalyan Swarup
Dean, Management (UG)
COURSE STRUCTURE Trimester I

<table>
<thead>
<tr>
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<tbody>
<tr>
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<td>Compulsory Subject</td>
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<tr>
<td>Course Title</td>
<td>Business Communication and Personality Development</td>
</tr>
<tr>
<td>Teaching Scheme and Credits</td>
<td>L</td>
</tr>
<tr>
<td>Weekly load hrs.</td>
<td>6</td>
</tr>
</tbody>
</table>

**Course Description:** This course exemplifies the importance of communication and helps students to acquaint with application of communication skills in the world of business. Along with that this course also focuses on personality development of students. It gives better understanding of the concept of personality development and its significance.

**Course Objective**

a) To help students to acquaint with communication skill in the world of business
b) To help students learn and practice business communication skills – kinds of business correspondence, handling various business situations
c) **Skills:** To develop skills of effective business communication - both written and oral.
d) To understand various traits of personality development.

**Course Outcomes:**

Develop good communication skills and a good, impressive personality to become successful future managers

**Unit 1: Introduction to Business Communication (8)**

- Process of communication – changing modes, channels of communication
- Types of communication- formal- informal, oral-written, verbal-non-verbal etc.
- Barriers to communication - overcoming communication barriers
- Cross cultural communication

**Unit 2: Business Communication- I (10)**

- Business Letters- Format and Layout, Components of a Business Letter
- Writing Business Letters- Purchase Order, Quotation, Invitation etc.
- Notice, Agenda, and Minutes
- Recruitment Correspondence- Application Letter, Curriculum Vitae, Appointment Letter, Resignation Letter
- Writing E-mails

**Unit 3: Business Communication - II (08)**

- Group Discussion
- Presentation Skills
- Interview Techniques

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Unit 4: Personality (08)
- Meaning and Definition of Personality.

Unit 5: Personality Development- (11)
- Pillars of Personality Development- Introspection, Self-Assessment, Self- Appraisal, Self- Development, Self- Introduction
- Team Building-Concept of group-group dynamics, team building practices - through group exercises, team task / role play, ability to work together
- Business Etiquettes- ABC’S of etiquettes, Developing culture of Excellence
- Role of good manners in Business

Learning Resources:

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of book</th>
<th>Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Business Communication</td>
<td>K. K. Sinha</td>
</tr>
<tr>
<td>2</td>
<td>Essentials of Business Communication</td>
<td>Rajendra Pal and J. S. Korlhalli</td>
</tr>
<tr>
<td>3</td>
<td>Communication for Business</td>
<td>Shirley Taylor</td>
</tr>
<tr>
<td>4</td>
<td>Personality Development</td>
<td>Dhanashri Ghate</td>
</tr>
</tbody>
</table>

Pedagogy:
Discussion, Interaction, Use of Audio-Visual Aids, Peer Learning, Group Learning etc.

Assessment Scheme:
Internal evaluation of each subject will be for 200 marks (which will be converted to 50 marks); divided as follows:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mid Term Examination</td>
<td>50</td>
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<td>50</td>
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<td>50</td>
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<td>50</td>
</tr>
<tr>
<td>Total Marks</td>
<td>200</td>
</tr>
</tbody>
</table>

Term End Examination : (50 marks )

Prepared By    Checked By    Approved By
Prof. Shweta Deshpande    Prof. Geetika Parmar    Prof. Shalaka Ghodke

Chairman, Board of Studies

Dr. Kalyan Swarup
Dean, Management (UG)
COURSE STRUCTURE Trimester I

<table>
<thead>
<tr>
<th>Course Code</th>
<th>BBC103A</th>
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<tbody>
<tr>
<td>Course Category</td>
<td>Compulsory Subject</td>
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<td>Course Title</td>
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<td>Teaching Scheme and Credits</td>
<td>L</td>
</tr>
<tr>
<td>Weekly load hrs.</td>
<td>6</td>
</tr>
</tbody>
</table>

Course Objectives:
1. To understand applications of matrices in business.
2. To understand the concept and application of Permutations & Combinations in business.
3. To use the concept of L.P.P. and its applications in business.
4. To understand the concept of Transportation problems & its applications in business world.
5. To understand the concept of Assignment problems & its applications in business world.

Course Outcomes:

Course Contents:

Unit I: - Matrices and Determinants (up to order 3 only): (13)
1.1. Multivariable data, Definition of a Matrix, Types of Matrices,
1.2. Algebra of Matrices, Determinants, Adjoint of a Matrix,
1.3. Inverse of a Matrix via Adjoint Matrix,
1.4. Homogeneous System of Linear equations, Condition for Uniqueness for the homogeneous system, Solution of Non-homogeneous System of Linear equations (not more than three variables).
1.5. Condition for existence and uniqueness of solution, Solution using inverse of the coefficient matrix,
1.6. Numerical sums

Unit II: - Permutations and Combinations: (07)
2.1. Permutations of ‘n’ dissimilar objects taken ‘r’ at a time (with or without repetition). nPr = n! / (n-r)! (Without proof).
2.2. Combinations of ‘r’ objects taken from ‘n’ objects. nCr = n! / r!(n-r)! (Without proof)
2.3. Numerical sums with applications.

Unit III: - Linear Programming Problem (L.P.P.): (07)
3.1. Meaning of LPP, Formulation of LPP,
3.2. Solution by graphical method, Simplex method and Big M method, problems relating to maximum three variables only.

Unit IV: - Transportation Problem (T.P.): (08)
4.1. Statement and meaning of T.P.
4.2. Methods of finding initial basic feasible solution by
   a. North West corner Rule,
   b. Matrix Minimum method and
   c. Vogel’s Approximation method.

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4.3. Simple numerical problems (concept of degeneracy is not expected)

**Unit V: Use of Computer in Numerical solutions** (10)
- Solution of numerical sums using computer for Unit I to Unit IV. (Use of MS Office)

**Reference Books:** None

**Text Book:**
1) Business Mathematics by Dr. Amarnath Dikshit & Dr. Jinendra Kumar Jain.
2) Business Mathematics by Padmalochan Hazarika – Sultan chand & sons, Delhi
3) Business Mathematics by Bari - New Literature publishing company, Mumbai
4) Operations Research by V.K. Kapoor - Sultan chand & sons
5) Operations Research by Dr. S. D. Sharma – Sultan Chand & Sons.

**Assessment Scheme:**
Internal evaluation of each subject will be for 200 marks (which will be converted to 50 marks); divided as follows:

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**Term End Examination:** (50 marks)

**Prepared By**
Prof. Vinaya Nimbolkar

**Checked By**
Prof. Geetika Parmar

**Approved By**
Prof. Shalaka Ghodke

**Chairman, Board of Studies**

Dr. Kalyan Swarup
Dean, Management (UG)
# COURSE STRUCTURE Trimester I

<table>
<thead>
<tr>
<th>Course Code</th>
<th>BBC104A</th>
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<tbody>
<tr>
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<tr>
<td>Course Title</td>
<td>Programming Principles &amp; Algorithms</td>
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<td>Weekly load hrs.</td>
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</table>

**Pre-requisites:** This course is aimed at students with little or no prior programming experience, but a desire to understand computational approaches to problem solving.

**Course Objectives:**

1. **Knowledge:**
   (i) Define the concept of programming and describe the basic Features of a Program.
   (ii) Introduce the basic concepts relating to algorithms, Flowcharts and Programming.
   (iii) Enumerate the role of an algorithm in problem solving and how it relates to a program.
   (iv) Explain the program development life cycle and different problem solving techniques.

2. **Skills:**
   (i) Learn the fundamental data structures like data types, arithmetic Operations, arrays, programming constructs (like loops, if-else-if etc.), Recursion etc.
   (ii) Expose the basics of measuring the efficiencies of algorithms and how to identify basic operations within an algorithm.

3. **Attitude**
   To develop following:
   (i) Analytical skills
   (ii) Problem solving attitude

**Course Outcomes:**

1. Problem solving through the efficient use of algorithms & flowcharts and subsequent implementation of the algorithm in any language of choice that is suitable to the application area.
2. Expose the basic relationships that exist between algorithms and program development.
3. Discuss the fundamental data structures, data types, arithmetic operations, programming constructs etc.
4. Develop algorithms to perform some basic sorting, such as Merge Sort, Selection sort, Bubble Sort, Quick Sort, etc. on some data, and evaluate the performance of each algorithm.
5. Develop algorithms to perform some basic searching such as binary and sequential search and evaluate the performance of each algorithm.

**Course Contents:**

**Introduction to Programming**

1.1 Meaning and Significance of Programming
1.2 Levels of Programming Languages
1.3 Features of Programming Languages

---

Dr. Kalyan Swarup
Dean, Management (UG)
1.4. Programming Methodologies and Application Areas
1.5. Language Translators
1.6. The Programming Environment
1.7. Program Development Cycle
1.8. Program Execution Stages
1.9. Problem Solving Techniques

Algorithms & Flowcharts
2.1. Introduction to Algorithms.
2.2. Characteristics of Algorithms.
2.3. Introduction to Flowcharts.
2.4. Symbols used in Flowcharts.
2.5. Concepts of variables, constants, operators and conditional branching.
2.6. Algorithms and flowcharts covering above topics.

Loops
3.1 Introduction
3.2 The while-loop Looping constructs
3.3 The do-while loop Looping constructs
3.4 The for-loop Looping constructs
3.5 Nested loops Looping constructs
3.6 Continue and break statement Looping constructs
3.7 The goto-statement Looping constructs
3.8 exit-statement Looping constructs
3.9 Algorithms and flowcharts covering above topics Looping constructs

Arrays
4.1 Introduction: Arrays
4.2 Types of arrays
4.3 Declaring and accepting 1-D array using loops
4.4 Declaring and accepting 2-D array using loops
4.5 Algorithms on 1-D and 2-D arrays.

Searching and sorting
5.1 Introduction to Searching & Sorting
5.2 Big – O Notation: Time and Space complexity
5.3 Insertion Sort, Selection Sort, Bubble Sort
5.4 Comparing bubble sort, selection sort and insertion sort
5.5 Linear Search and its performance
5.6 Binary search and its performance

Lab Practicals/Exercises:
Learning Resources:
Text Book:
Introduction to algorithms - Cormen, Leiserson, Rivest, Stein

Reference Books:
- Programming Principle & Algorithm - Paritosh Bansal
- Digital Electronics - Anil Kumar
- Principles Of Programming And Algorithm - Bhavana Chaudhari, Rajesh S. Yemul

Pedagogy:
Participative learning, group discussions, presentation, demonstrations, regular assignments (class & home), conceptual and contextual learning, practical (Lab) sessions, regular tests and surprise tests.

Assessment Scheme:
Internal evaluation of each subject will be for 200 marks (which will be converted to 50 marks); divided as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Marks</th>
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<tbody>
<tr>
<td>Mid Term Examination</td>
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<td>Attendance and Class Participation</td>
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<tr>
<td>Total Marks</td>
<td>200</td>
</tr>
</tbody>
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Term End Examination: (50 marks)

Prepared By
Prof. Shalaka Godke

Checked By
Prof. Geetika Parmar

Approved By
Prof. Shalaka Ghodke

Chairman, Board of Studies

Dr. Kalyan Swarup
Dean, Management (UG)
COURSE STRUCTURE Trimester II

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<td>L</td>
<td>T</td>
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<td>6</td>
<td>30</td>
</tr>
</tbody>
</table>

**Pre-requisites:** This course is used to students with basic knowledge of computers

**Course Objectives:**

1. **Knowledge:** To understand concepts of Computer Fundamentals in respect of:
   - (i) Give you a general understanding of how a computer works
   - (ii) Introduce you to assembly-level programming
   - (iii) Prepare you for future courses.
   - (iv) Learn different phases or generations of computers and improvement per generation.

2. **Skills:**
   - (i) How to use personal computer.
   - (ii) Basic knowledge of inbuilt programs.
   - (iii) Knowledge of all programming languages: Assembly, Low level, High Level
   - (iv) Hands on skills in Applications software like MS office
   - (v) Learn how to use internet and other tools for professional work

3. **Attitude** To develop following:
   - (i) Good technical background to learn programming languages
   - (ii) Awareness of Operating system
   - (iii) Digital and electronic communication.

**Course Outcomes:**

Fundamental knowledge of computers will prepare students to learn advance concept and high level programming languages. Practical knowledge of application programs like Ms Word, PowerPoint, and Excel will help them to outshine in their professional carrier.

**Course Contents:**


- **The Internet & Internet Services:** Introduction, History of Internet, Internetworking protocol, The Internet architecture Managing the Internet, Connecting to Internet, Internet connections, Dial up access, Leased line, Integrated services Digital Network ISDN, Digital subscriber line DSL, Cable modem, Internet address, Internet services, World wide web www, Web browser, Uniform resource locator URL, Internet search engines, www development languages, Electronic mail, Email address, Email message format, Email services, How email works, File transfer protocol FTP, How FTP works, Terminal network TELNET, News, Internet Relay Chat (IRC)

- **Information Systems:** Introduction, Data information and knowledge, Characteristics of information, Information system, Computer Based information system, Need for efficient...
information system, Categories of information system, Operations support system ,Transaction processing system, Office automation system, Management support system ,Management information system, Decision support system, Executive information system, Specialized information system , Expert systems, Enterprise resource planning , Electronic Commerce, Careers in information systems.

**Basic Computer Security** : Introduction, Security threat and security attack, Malicious software, Virus, Worms, Trojan horses, Hacking, Packet sniffing, Password cracking, Email hacking.


**Laboratory Exercises / Practical:**

1. Create a MS-Excel worksheet to calculate the balance of customer from bank after depositing withdrawing some amount (take 10 suitable records).

<table>
<thead>
<tr>
<th>Acc_no</th>
<th>Withdraw</th>
<th>Deposits</th>
<th>Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Prepare MS-PowerPoint presentation slide which shows the rising sun using auto shape, clip art, custom animation.

3. Create a MS-Excel worksheet to calculate the monthly total salary of an Employee if basic salary is given (take 10 suitable records).

<table>
<thead>
<tr>
<th>Emp_no</th>
<th>Basic_salary</th>
<th>HRA</th>
<th>DA</th>
<th>I.T.</th>
<th>P.F.</th>
<th>Net Salary</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

   Total salary =Basic salary+hra+da
   HRA=15% of basic salary
   DA=150% of basic salary
   P.F. = 8.33% of basic salary
   IT =30% of basic salary
   Net salary=Basic salary+HRA+DA-(IT+PF)

4. Prepare MS-PowerPoint presentation slide on “Merry Christmas”. The slide should contain information about when it is celebrated, reason for celebration, how it is celebrated. (Use hyperlink, animation and images).

5. Create a MS-Excel worksheet Display a Pie Chart for following data

<table>
<thead>
<tr>
<th>Roll No</th>
<th>Marks out of 500</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>432</td>
</tr>
<tr>
<td>2</td>
<td>300</td>
</tr>
<tr>
<td>3</td>
<td>400</td>
</tr>
</tbody>
</table>

6. Prepare MS-Excel worksheet to store the Marks of 5 students in 3 subjects. Table should contain given fields [Roll no, Name, Address, Marks, Total, Percentage and Grade]. Use

---

Dr. Kalyan Swarup  
Dean, Management (UG)
7. Prepare a score card for following information and create Pivot table and Pivot Chart.

<table>
<thead>
<tr>
<th>Players</th>
<th>Centuries</th>
<th>Wicket</th>
<th>Sixes</th>
<th>Fours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sachin Tendulkar</td>
<td>64</td>
<td>15</td>
<td>80</td>
<td>90</td>
</tr>
<tr>
<td>Virendra Sehwag</td>
<td>50</td>
<td>20</td>
<td>50</td>
<td>65</td>
</tr>
<tr>
<td>Yuwaraj Singh</td>
<td>20</td>
<td>30</td>
<td>35</td>
<td>45</td>
</tr>
<tr>
<td>Mahendra sing Dhoni</td>
<td>25</td>
<td>24</td>
<td>45</td>
<td>55</td>
</tr>
</tbody>
</table>

8. Following worksheet contains test score of student using VLOOKUP function assign a letter grade to test score.

<table>
<thead>
<tr>
<th>Student</th>
<th>Score</th>
<th>Grade</th>
<th>Score</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adams</td>
<td>36</td>
<td></td>
<td>0</td>
<td>F</td>
</tr>
<tr>
<td>Bracker</td>
<td>68</td>
<td></td>
<td>40</td>
<td>D</td>
</tr>
<tr>
<td>Joy</td>
<td>50</td>
<td></td>
<td>70</td>
<td>C</td>
</tr>
<tr>
<td>Jackson</td>
<td>77</td>
<td></td>
<td>80</td>
<td>B</td>
</tr>
<tr>
<td>Bob</td>
<td>92</td>
<td></td>
<td>90</td>
<td>A</td>
</tr>
<tr>
<td>Alice</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kathy</td>
<td>74</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>William</td>
<td>45</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thomson</td>
<td>60</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wilson</td>
<td>89</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daizy</td>
<td>99</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rozy</td>
<td>91</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Martha</td>
<td>59</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9. Prepare MS-PowerPoint presentation which displays information about explorer activities (use hyperlink, animation and images).

10. Prepare MS-PowerPoint presentation which explains courses under computer science department in your college.

Learning Resources:
Text Book:
Computer Fundamentals; Anita Goel, Pearson, 2017

Reference Books:
- Computer Fundamentals with Ms Office Applications; Saravanan, Paperback – 2008

Supplementary Reading:

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Web Resources: https://gradeup.co/notes-on-computer-fundamental-i-324242b2-d967-11e5-be7b-4cda88ef8eae
https://www.edutechlearners.com/computer-fundamentals-p-k-sinha-free-pdf/


Pedagogy:
Case studies, Videos on related topics, practical demonstration of hardware devices, Lab sessions on application software

Assessment Scheme:
Internal evaluation of each subject will be for 200 marks (which will be converted to 50 marks); divided as follows:

<table>
<thead>
<tr>
<th></th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Presentations/ Practical/ Viva/Project</td>
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</tr>
<tr>
<td>Total Marks</td>
<td>200</td>
</tr>
</tbody>
</table>

Term End Examination: (50 marks)

Prepared By
Prof. Gautam Bapat

Checked By
Prof. Geetika Parmar

Approved By
Prof. Shalaka Ghodke

Chairman, Board of Studies

Dr. Kalyan Swarup
Dean, Management (UG)
# COURSE STRUCTURE Trimester II

<table>
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<table>
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<th>Weekly load hrs.</th>
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<td></td>
<td>6</td>
</tr>
</tbody>
</table>

**Course Objectives:**

- **Knowledge:** Explain the concept and role of *cost accounting* in the business management of companies. Define the costs and their impact on value creation in the companies.
- **Skills:** To develop proficiency and to use various techniques and methods effectively in the Costing.
- **Attitude:** To develop an ability to analyze cost & master the skill to control and reduce cost.

**Course Outcomes:**

1. Express the place and role of cost accounting in the modern economic environment
2. Select the costs according to their impact on business
3. Differentiate methods of schedule costs per unit of production
4. Differentiate methods of calculating stock consumption
5. Interpret the impact of the selected costs method
6. Identify the specifics of different costing methods.

**Course Contents:**

- **Population and Sample**
  1.1 Definition of Statistics, Scope of Statistics in Economics, Management Sciences and Industry.
  1.2 Concept of population and sample with illustration.
  1.3 Methods of Sampling – SRSWR, SRSWOR, Stratified, Systematic. (Description of sampling procedures only)
  1.4 Data Condensation and graphical Methods: Raw data, attributes and variables, classification, frequency distribution, cumulative frequency distributions.
  1.5 Graphs - Histogram, Frequency polygon. Diagrams - Multiple bar, Pie, Subdivided bar. Multivariable data.

- **Averages or Measure of central tendency. (Sessions 12)**
  2.1 Introduction
  2.2 Requisites of a good average.
  2.3 Various measure of central tendency
  2.4 Arithmetic mean, step deviation method for computing A.M. Mathematical properties of A.M. merits and demerits of A.M.
  2.5 Median, Computation of median, merits and demerits of median, partition values, Graphical method of locating partition method.
  2.6 Mode, Computation of mode, merits and demerits of mode, Graphical location of mode.

**Measure of dispersion (Sessions 12)**

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3.1 Measures of Dispersion
3.2 Concept of dispersion, characteristics of good measure of dispersion.
3.3 Range: Definition, merits and demerits
3.4 Measures of dispersion for comparison: coefficient of range, coefficient of quartile deviation and coefficient of mean deviation, coefficient of variation (C.V.)

Theory of probability
4.1 Introduction, random experiment, sample point, sample space, event, types of events.
4.2 Permutation and Combination
4.3 Classical or priori approach of probability, Limitations of Classical Definition: Theorems of probability (Addition and multiplication)
4.4 Conditional probability
4.5 Concept of probability distribution and its properties

Laboratory Exercises / Practical: NA

Learning Resources:
Text Book: DBMS - Henry Korth.

Pedagogy:
Case discussion, understanding data pattern, Problem solving, assignment, conceptual and contextual learning.

Assessment Scheme:
Internal evaluation of each subject will be for 200 marks (which will be converted to 50 marks); divided as follows:

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<td>Total Marks</td>
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</table>

Term End Examination: (50 marks)

Prepared By
Prof. Vinaya Nimbolkar

Checked By
Prof. Geetika Parmar

Approved By
Prof. Shalaka Ghodke

Chairman, Board of Studies

Dr. Kalyan Swarup
Dean, Management (UG)
# COURSE STRUCTURE Trimester II

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<td>Course Title</td>
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<td>Weekly load hrs.</td>
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<td>45</td>
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<td>3</td>
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**Course Objectives:**

1. **Knowledge**
   - (i) To understand applications of DBMS in industry.
   - (ii) To understand the concept and application of Relational Algebra
   - (iii) To understand use and application of Data models

2. **Skills**
   - (i) Hands on experience on different types of queries.
   - (ii) Drawing ERD
   - (iii) To understand select, project operations

3. **Attitude**
   - (i) Image case studies related to normalization & database structures tables
   - (ii) Various queries

**Course Outcomes:**

To learn and practice case studies, understand normalization, relation algebra

**Course Contents:**

**File System**
- 1.1 Introduction, Logical and physical Files
- 1.2 File Structure
- 1.3 File Operations
- 1.4 File Organization
- 1.5 Record Types, Types of organizations

**DBMS**
- 2.1 Introduction, Def of DBMS
- 2.2 Comparison bet file system and dbms
- 2.3 Advantages & Disadvantages of DBMS
- 2.4 Users of DBMS
- 2.5 Capabilities of good DBMS, System structure

**Data Models and relational database**
- 3.1 Introduction to data models
- 3.2 Terms- Relation, Tuple,
- 3.3 attributes, Degree, domain, cardinality
- 3.4 Examples for attributes, Degree, domain, cardinality
- 3.5 Select operation and examples
- 3.6 Project operation and examples
- 3.7 Cartesian product
- 3.8 Examples- Cartesian product
- 3.9 Natural Join

---

Dr. Kalyan Swarup  
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3.10 Examples - Natural Join

SQL and Relational Database Design
- 4.1 Definition
- 4.2 Introduction
- 4.3 History of SQL
- 4.4 Basic Structure
- 4.5 DDL & DML
- 4.6 Simple Queries
- 4.7 Simple Queries
- 4.8 Nested Queries
- 4.9 Nested Queries

Laboratory Exercises / Practical: Not Applicable

Learning Resources:
- Text Book:
  - DBMS- Henry Korth
- Reference Books:
  - DBMS- Bipin Desai
- Supplementary Reading:
  - SQL, PL/SQL- BPB Publications, Author IVAN Bayros

Pedagogy:
- Case discussion, Group Discussion, Problem solving, assignment, conceptual and contextual learning.

Assessment Scheme:
- Internal evaluation of each subject will be for 200 marks (which will be converted to 50 marks); divided as follows:

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</tr>
<tr>
<td>Total Marks</td>
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Term End Examination : (50 marks )

Dr. Kalyan Swarup
Dean, Management (UG)
Dr. Kalyan Swarup
Dean, Management (UG)
COURSE STRUCTURE Trimester II

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</table>

**Pre-requisites:** This course is used to students with basic knowledge of computers.

**Course Objectives:**

1. **Knowledge:** (i). This course is designed to provide a comprehensive study of the C programming Language.
   (ii). It stresses the strengths of C, which provide students with the means of writing efficient, maintainable, and portable code.
   (iii) The nature of pointers is emphasized in the wide variety of examples and applications.
   (iv) To learn and acquire art of C Processor.

2. **Skills:** C is the language of compilers, interpreters, editors, operating systems and embedded programming. When you learn to program in C you almost have to gain an understanding of how programs execute.

3. **Attitude** To develop following:
   (i) Programming skills
   (ii) Problem solving attitude

**Course Outcomes:**

1) Understand the concepts of C Programming, data types and array data structure.
2) Analyze algorithms and determine their time complexity.
3) Understand the dynamics of Memory by the use of pointers.
4) Understand and apply various concepts such as strings to solve various computing problems using C-programming language.
5) Able to implement and know when to apply C Processor and Bitwise operators.
6) Able to effectively choose the data structure that can create/update the files

**Course Contents:**

**Introduction & Language Fundamentals**

1.1 Introduction to C, history, Structure of C program
1.2 Language Fundamentals – keywords, identifiers, character sets, tokens
1.3 Data types, Variables and constants
1.4 Qualifiers
1.5 Operators, types of operators – unary, binary, relational, conditional, logical, arithmetic
1.6 Bitwise operators
1.7 Operator precedence & associativity
1.8 Console based I/O and related built-in I/O functions: printf(), scanf(), getch(), getchar() and basic formatting
1.9 Type casting

**Decision making and loops**

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Dean, Management (UG)
2.1 Decision making structure – if statement, it-else statement, nested if-else statement, conditional operator, switch statements
2.2 Loop control structures – while loop, dowhile loop, for loop, nested loops
2.3 Jump statements – break, continue, goto, exit

**Arrays in C**
3.1 Introduction to 1-D array, definition, declaration, initialization
3.2 Accessing and displaying 1-D array elements
3.3 Introduction to 2-D array, definition, declaration, initialization
3.4 Accessing and displaying 2-D array elements
3.5 Multidimensional Arrays

**Functions in C**
4.1 Introduction – purpose, definition, declaration, main () function
4.2 Function prototype and calling a function
4.3 Variables – local and global, scope (local, global, file) and lifetime of a variable
4.4 Arguments, parameters, formal & actual parameters, Function return type
4.5 Call by value, call by reference
4.6 Arrays and functions
4.7 Command line arguments
4.8 Storage classes

**C Preprocessors**
5.1 Definition of preprocessor
5.2 Macro substitution - #define
5.3 File inclusion - #include
5.4 Conditional Compilation - #if, #else, #elif
5.5 Other preprocessors - #undef, #ifdef, #ifndef, #error
5.6 Parameterized macros

**Laboratory Exercises / Practical:** Yes

**Learning Resources:**

| Text Book: | Let us C - Yashwant Kanetkar |

**Reference Books:**
- Programming in C - Balguruswamy

**Supplementary Reading:**
- The C programming Lang., Pearson Ecl – Dennis Ritchie
- Structured programming approach using C - Forouzah & Ceilberg Thomson learning publication.

**Web Resources:**
- Tutorials point

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Dr. Kalyan Swarup
Dean, Management (UG)
Pedagogy:
Participative learning, presentation, demonstrations, regular assignments (class & home), conceptual and contextual learning, practical (Lab) sessions, regular tests and surprise tests.

Assessment Scheme:
Internal evaluation of each subject will be for 200 marks (which will be converted to 50 marks); divided as follows:

<table>
<thead>
<tr>
<th></th>
<th>Marks</th>
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<tbody>
<tr>
<td>Mid Term Examination</td>
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<tr>
<td>Attendance and Class Participation</td>
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<td>50</td>
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<td>Total Marks</td>
<td>200</td>
</tr>
</tbody>
</table>

Term End Examination : (50 marks )

Prepared By
Prof.Kaushik Jaiswal

Checked By
Prof.Geetika Parmar

Approved By
Prof.Shalaka Ghodke

Chairman, Board of Studies

Dr. Kalyan Swarup
Dean, Management (UG)
### COURSE STRUCTURE Trimester III

<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>Course Category</td>
<td>Compulsory Subject</td>
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<tr>
<td>Course Title</td>
<td>Organisational Behaviour</td>
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<tr>
<td>Teaching Scheme and Credits</td>
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<tr>
<td>Weekly load hrs.</td>
<td>L</td>
</tr>
<tr>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

**Pre-requisites:** This course is used to students with basic knowledge of computers.

**Course Objectives:**

1. **Knowledge:**
   1. To equip the students to understand the impact that individual, group & structures have on their behavior within the organizations.
   2. To help them enhance and apply the knowledge they have received for the betterment of the organization.

2. **Course Outcomes:**
   1. Understand the concepts of C Programming, data types and array data structure.
   2. Analyze algorithms and determine their time complexity.
   3. Understand the dynamics of Memory by the use of pointers.
   4. Understand and apply various concepts such as strings to solve various computing problems using C-programming language.
   5. Able to implement and know when to apply C Processor and Bitwise operators.
   6. Able to effectively choose the data structure that can create/update the files.

**Course Contents:**

1. **Introduction of Organizational Behavior**
   1.1 Fundamentals of Organizational Behavior - Definition,
   1.2 Key elements of OB,
   1.3 Nature and scope of OB,
   1.4 Fields contributing to OB, OB Process, Model of OB

2. **Leadership and Motivation**
   1. Leadership – concept, functions and leadership Styles.
   2. Motivation – Definition, Need and Importance of Motivation,
   Motivation Theories - Maslow's Need Hierarchy Theory, McGregor's Theory 'X' and Theory 'Y', Herzberg's Two factor theory of Motivation, David C. McClelland”s Three need theory.

3. **Perception and Attitudes**

4. **Foundation of Group Behaviour and Team Building**
   Group Behaviour - Definition and characteristics of Group, Types of Groups. Team Building - Definition and Meaning of Team, Types of Team, Team building process.

5. **Job Stress**

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Dean, Management (UG)
Meaning and definition of Stress, causes or Sources of Stress, How to Manage or cope with stress.

**Assessment Scheme:**

Internal evaluation of each subject will be for 200 marks (which will be converted to 50 marks); divided as follows:

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<th>Assessment Category</th>
<th>Marks</th>
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<tbody>
<tr>
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<tr>
<td><strong>Total Marks</strong></td>
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</table>

**Term End Examination:** (50 marks)

Prepared By: Prof. Dr. Pratibha U
Checked By: Prof. Geetika Parmar
Approved By: Prof. Shalaka Ghodke

Chairman, Board of Studies
COURSE STRUCTURE Trimester III

<table>
<thead>
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<td>Course Category</td>
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<tr>
<td>Course Title</td>
<td>Basics Of Financial Accounting</td>
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<table>
<thead>
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<th>T</th>
<th>Laboratory</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Weekly load hrs</td>
<td>6</td>
<td>45</td>
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</table>

**Pre-requisites:** This course will not require you to have previous experience in any particular area but you should have a high school reading level. No books will be required.

**Course Objectives:**

1. **Knowledge:** (i) To understand the basic process of Accounting  
   (ii)To understand the Final Accounts of sole trading concern  
   (iii)To understand computers & financial application  

2. **Skills:** To learn process of recording transactions-Journal Entries.  
   (i)To understand the different concepts of Accounting.  
   (ii)To understand the preparation of Final Accounts & Bank reconciliation statement.

3. **Attitude** To develop following:  
   (i)Analytical skills  
   (ii)Problem solving attitude

**Course Outcomes:**

- Understanding basics of Accounting: Students will know the basic concepts in Accounting so that they will be able understand the application of accounting rules in preparation of Journal, Ledge, Trial Balance, Subsidiary books & Final Accounts.  
- Problem Solving: students will learn to solve sums on Journal & Ledger book preparation, Trial Balance & subsidiary books preparation. Students will prepare final accounts which is the basic objective of financial accounting.  
- Competence in the use of the different accounting software packages with the help of learning basic concepts of accounting.  
- By completing this module, the students should be able to understand the day to day use of accounting in household & business as well.

**Course Contents:**

**Introduction:**  
1.1 Financial Accounting- Definition, Scope, Objectives & Limitations  
1.2 Accounting Concepts, Principles & Conventions  
1.3 Branches of Accounting

**Recording of Transactions:**  
2.1 Types of Accounts,  
2.3 Ledger Accounts, Preparation of Trial Balance

**Subsidiary Books:**  
3.1 Sub division of Journal, Cash Book with Cash Bank and Discount Column.

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Dean, Management (UG)
3.2   Bank Reconciliation Statement

**Preparation of Final Accounts:**
4.1   Preparation of Trading Account and Profit and Loss A/c.  
4.2   Preparation of Balance Sheet of Sole Proprietorship.

**Computerized Accounting:**
5.1 Computers and Financial application, Accounting Software packages.

Laboratory Exercises / Practical: NA

**Learning Resources:**
Text Book: Fundamentals of Accounting & Financial Analysis; Anil Chowdhry

**Reference Books:**
- Accounting Made Easy; Rajesh Agarwal & R Srinivasan

**Supplementary Reading:**
- Learning material provided by Faculty-PPTs, handouts.  
- Financial accounting; Jane Reimers  
- Financial Accounting for Management; Amrish Gupta

**Pedagogy:** Practical, Problem solving, assignment, conceptual and contextual learning.

**Assessment Scheme:**
Internal evaluation of each subject will be for 200 marks (which will be converted to 50 marks); divided as follows:

<table>
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<tr>
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<td><strong>Total Marks</strong></td>
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**Term End Examination : (50 marks )**

<table>
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<tr>
<th>Prepared By</th>
<th>Checked By</th>
<th>Approved By</th>
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<tbody>
<tr>
<td>Prof.Dipak Vakrani</td>
<td>Prof.Geetika Parmar</td>
<td>Prof.Shalaka Ghodke</td>
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Chairman, Board of Studies
COURSE STRUCTURE Trimester III

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<td>30</td>
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</table>

**Pre-requisites:** This course is used to students who have a knowledge in C programming

**Course Objectives:**

1. **Knowledge:**
   (i) This course is designed to provide a comprehensive study of the C programming language
   (ii). It stresses the strengths of C, which provide students with the means of writing efficient, maintainable, and portable code.
   (iii) The nature of pointers is emphasized in the wide variety of examples and Applications.

2. **Skills:**
   (i). To learn and acquire art of C Processor.
   (ii). To know about some File Handling Functions and how to choose
   (iii) Command Line Arguments for solving a problem.

3. **Attitude**
   To develop following:
   (i) Analytical skills
   (ii) Problem solving attitude efficient, maintainable, and portable code.
   (iii) The nature of pointers is emphasized in the wide variety of examples and Applications.

**Course Contents:**

- **File Handling in C**
  1.1 Introduction – defining files
  1.2 Creating files &amp; types of files
  1.3 File opening modes
  1.4 Input &amp; output operations on files using standard library
  1.5 Copying ad appending files
  1.6 Reading &amp; Writing binary files
  1.7 Random access files – fseek, ftell, rewind

- **Pointer in C**
  2.1 Introduction to Pointers – definition, declaration and initialization
  2.2 Indirection operator and address of operator, accessing variable through pointers
  2.3 Pointer – Memory allocation
  2.4 Array of pointers
  2.5 Pointer to Pointer
  2.6 Constant pointer and pointer to constants
  2.7 Pointer arithmetic
  2.8 Pointer to functions

- **Structures &amp; Union**
  3.1 Introduction to structure
3.2 Declaring, defining and accessing members
3.3 Structure operations
3.4 Array of Structures
3.5 Nested Structures
3.6 Pointers to Structures, pointer as member of structure
3.7 Introduction to union
3.8 Declaring, defining and accessing members
3.9 Difference between structures and unions

**Pointer & Memory Management**
4.1 Dynamic Memory allocation (DMA)
4.2 malloc, calloc, realloc, free
4.3 malloc Vs calloc
4.4 Heap Memory
4.5 Stack Memory – Pitfalls
4.6 Dangling Pointers
4.7 DMA – Errors
4.8 DMA – Unspecified Behavior

**Introduction to Graphics in C**
5.1 Introduction to graphics in C
5.2 Graphics drivers & mode initialization
5.3 Graphics.h header file
5.4 Colors in C Graphic programming
5.5 Simple c Graphics program to draw shapes – circle, rectangle, eclipse, square
5.6 Simple programs to draw lines using graphics.h

### Laboratory Exercises / Practical: Yes

### Learning Resources:

**Text Book:**
The C Programming Language by Brian W. Kernighan, Dennis Ritchie

**Reference Books:**
- Let us C by Yashwant Kanetkar
- Programming in C by Balguruswamy

### Supplementary Reading:

Web Resources:
- Tutorials Point

### Pedagogy:

Case studies, Videos on related topics, Lab sessions on Advanced Programming

### Assessment Scheme:

Internal evaluation of each subject will be for 200 marks (which will be converted to 50 marks); divided as follows:

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<td>Checked By</td>
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<td>------------------</td>
</tr>
<tr>
<td>Prof. Archana Mullapudi</td>
<td>Prof. Geetika Parmar</td>
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Chairman, Board of Studies
COURSE STRUCTURE Trimester III

<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>Course Category</td>
<td>Compulsory Subject</td>
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<td>Course Title</td>
<td>Advanced Database Management Systems</td>
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<tr>
<td>Teaching Scheme and Credits Weekly load hrs.</td>
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</tr>
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<td>6</td>
</tr>
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</table>

Course Objective:

1. **Knowledge:**
   (i) To understand advance database management system’s applications.
   (ii) To understand the concept and application of parallel databases
   (iii) To understand use and application of RDBMS

2. **Skills:**
   (i) Client server tech
   (ii) Distributed transactions
   (iii) Relational algebra

3. **Attitude**
   To develop following:
   (i) Object oriented database
   (ii) Basic control structures

Course Outcomes:

To learn and practice case studies, understand normalization, relation algebra

**Advance Database Management System-Concepts and Architectures**

1.1 Introduction
1.2 Architecture
1.3 Issues in Application Development
1.4 Centralized
1.5 Client-Server Architecture
1.6 Server System
1.7 Parallel Database
1.8 Distributed Database
1.9 Web Based Systems

**Distributed Database**

2.1 Introduction, Architectures
2.2 Homogeneous and Heterogeneous Databases
2.3 Distributed Data Storage
2.4 Distributed Transactions
2.5 Commit Protocols
2.6 Availability
2.7 Cloud Based Database
2.8 Concurrency Control and Recovery in Distributed Databases
2.9 Directory Systems

**Specialty Databases and Applications, Parallel Databases**

3.1 Object Oriented Database – OR and OO
3.2 Temporal Databases
3.3 Spatial Data and Geographic Database
3.4 Multimedia Data
3.5 Mobility and Personal Databases
3.6 Introduction to Parallel Databases, Architecture, Input-Output Parallelism
3.7 Interquery and Intraquery Parallelism, Interoperational and Intraoperational Parallelism
3.8 Design of Parallel Systems
3.9 Parallelism on Multicore Processors

**Introduction to RDBMS**
4.1 Introduction to RDBMS
4.2 Difference between DBMS & RDBMS
4.3 Relational Algebra
4.4 Overview of Control Structures

**Laboratory Exercises / Practical:** NA

**Learning Resources:**

- **Text Book:** DBMS - Henry Korth
- **Reference Books:**
  - DBMS - Bipin Desai
- **Supplementary Reading:**
  - Concurrency Control and Recovery in Database Systems - Addison-Wesley Pub.
  - Database System Implementation - Hector Garcia-Molina, Jeffrey Ullman, and Jennifer Widom

**Pedagogy:**
Participative learning, discussions, demonstrations, assignment, conceptual and contextual learning, practice sessions.

**Assessment Scheme:**
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**Term End Examination:** (50 marks)

**Prepared By:** Prof. Vrushali Kulkarni  
**Checked By:** Prof. Geetika Parmar  
**Approved By:** Prof. Shalaka Ghodke

Chairman, Board of Studies

Dr. Kalyan Swarup  
Dean, Management (UG)