## Course 101: Communication Skills

<table>
<thead>
<tr>
<th>Course Code</th>
<th>101</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Title</td>
<td>Communication Skills</td>
</tr>
<tr>
<td>Credit</td>
<td>2</td>
</tr>
<tr>
<td>Teaching per Week</td>
<td>2 Hrs</td>
</tr>
<tr>
<td>Minimum weeks per Semester</td>
<td>15 (Including Class work, examination, preparation etc.)</td>
</tr>
<tr>
<td>Review / Revision</td>
<td>June 2017</td>
</tr>
<tr>
<td>Purpose of Course</td>
<td>Effective communication is vital for the success in various situations. This course will help students develop and improve English Communication skills.</td>
</tr>
<tr>
<td>Course Objective</td>
<td>The objective of this course is to guide/help students in improving their English communication skills.</td>
</tr>
<tr>
<td>Pre-requisite</td>
<td>Basic School English</td>
</tr>
<tr>
<td>Course Outcome</td>
<td>After studying this subject, students will be able to improve their communication skills in English.</td>
</tr>
</tbody>
</table>

### Course Content

#### Unit 1. Introduction
1.1. Spoken and conversation for Greetings, Requests, Invitation, Permission, Thanks etc.
1.2. Basic Sentence patterns
1.3. Basic rule of Composition
1.4. Vocabulary Development
1.5. Paragraph Development

#### Unit 2. Fundamentals of Grammar
2.1. Agreement between Subject and Verb
2.2. Model Auxiliary
2.3. Active and Passive voice
2.4. Conjunction and prepositions

#### Unit 3. Writing Skills
3.1. Guidelines for effective writing
3.2. Writing style of application
3.3. Personal Resume

#### Unit 4. Business Letter and Report Writing Skills
4.1. Business letter and Memo including Requests, Complaints, Quotation etc.
4.2. Technical Report writing

#### Unit 5. Speaking and Discussion Skills
5.1. Components of Effective talk / presentation
5.2. Planning of content of a talk / presentation
5.3. Use of Visual aids
5.4. Effective speaking skills
5.5. Discussion skills

### Reference Books
1. Handbook of practical Communication skills – Chrisle W. JAICO
2. Basic Managerial Skills for all – S. J. McGrath - PHI
3. Reading to learn – Sheila Smith & Thomas M. Methuen (London)
| 7. | Let’s talk English – M. I. Joshi |
| 8. | Essentials of Business Communications – Pat & Sons, S. Chand |

<table>
<thead>
<tr>
<th>Teaching Methodology</th>
<th>Class Work, Discussion, Self-Study, Seminars and/or Assignments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluation Method</td>
<td>30% Internal assessment. 70% External assessment.</td>
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</table>
## Course 102: Mathematics

<table>
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<tr>
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<tbody>
<tr>
<td>Course Title</td>
<td>Mathematics</td>
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<tr>
<td>Credit</td>
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<td>3 Hrs</td>
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<tr>
<td>Minimum weeks per Semester</td>
<td>15 (Including Class work, examination, preparation etc.)</td>
</tr>
<tr>
<td>Review / Revision</td>
<td>June 2017</td>
</tr>
</tbody>
</table>

### Purpose of Course
The purpose of this course is to develop mathematical abilities relevant to Computer Science.

### Course Objective
The objective of this course is to guide/help students in developing Mathematical Abilities relevant to Computer Science.

### Pre-requisite
School Mathematics

### Course Outcome
After studying this subject, students will be able to develop Mathematical Abilities relevant to Computer Science.

### Course Content

#### Unit 1. Set Theory
1.1. Introduction
1.2. Representation
1.3. Operation and its properties
1.4. Venn Diagram
1.5. Cartesian product and graph

#### Unit 2. Functions
2.1. Definition
2.2. Types – Domain and Range
2.3. Construction and functions

#### Unit 3. Mathematical Logic
3.1. Introduction to logic
3.2. Truth Table

#### Unit 4. Boolean Algebra
4.1 Definition & Examples of Boolean Algebra
4.2 Boolean Functions
4.3 Representation and minimization of Boolean Functions
4.4 Design example using Boolean algebra

#### Unit 5. Matrices and Determinants
5.1. Matrices of order M * N
5.2. Row and Column transformation
5.3. Addition, Subtraction and multiplication of Matrices
5.4. Computation of Inverse
5.5. Cramer’s Rule
5.6. Business Application of Matrices

### Reference Books
1. Co-ordinate Geometry – Shanti Narayan
2. Linear Algebra – Sushoma Verma
4. Schaum’s Outline of Boolean algebra and switching circuits – Elliot Mendelson
<table>
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<td>Evaluation Method</td>
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<tr>
<td></td>
<td>70% External assessment.</td>
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## Course 103: Introduction to Computers

<table>
<thead>
<tr>
<th>Course Code</th>
<th>103</th>
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<tbody>
<tr>
<td>Course Title</td>
<td>Introduction to Computers</td>
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<tr>
<td>Credit</td>
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<td>Teaching per Week</td>
<td>4 Hrs</td>
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<tr>
<td>Minimum weeks per Semester</td>
<td>15 (Including Class work, examination, preparation etc.)</td>
</tr>
<tr>
<td>Review / Revision</td>
<td>June 2017</td>
</tr>
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</table>

### Purpose of Course
A computer is a device that can receive, process and store data. They are used as tools in every part of society together with the Internet. Computers nowadays are complex; there are a lot of different components inside them, and they all serve different purposes. They all need to work together for the computer to work; knowing how a computer works makes it easier to use a computer by being able to understand how a computer will respond.

### Course Objective
The objective of this course is to provide knowledge of functional units, Number System, devices and memory & its storage.

### Pre-requisite
Fundamental Knowledge of Computers

### Course Outcome
After studying this subject, students will get knowledge of functional units, Number System, devices and memory & its storage.

### Course Content

#### Unit 1. Introduction
1.1. History of Development
1.2. Generation of Computers
1.3. Types of Computers-Microcomputers, Minicomputers, Mainframes, Super Computers
1.4. Hardware, Software & Firmware

#### Unit 2. Basic Computer Architecture
2.1. Block Diagram & Functional Units
2.2. Various hardware components: Mother board, Processor, Memory, ports
2.3. Phases of Machine cycle
   - 2.3.1. Fetch Cycle
   - 2.3.2. Execution Cycle
2.4. BIOS, POST

#### Unit 3. Number Systems
3.1. Various number systems (Binary, Octal, Hexadecimal, Decimal)
3.2. Conversion among various number systems (Consider all possible combinations from one number system to other number system)
3.3. Binary addition & subtraction
3.4. Hexadecimal addition & subtraction
3.5. Parity Scheme
3.6. ASCII Character Code

#### Unit 4. Memory
4.1. Memory organization
4.2. Addressing Modes
4.3. Memory types: RAM, ROM, FLASH, PROM, EPROM, EEPROM
4.4. Concepts of virtual memory, Cache memory
### Unit 5. Storage and I/O Devices
- 5.1. Hard disk and its architecture
- 5.2. Back up Devices (Optical Disc, USB)
- 5.3. Floppy Disks, CD-ROM, DVD ROM
- 5.4. Keyboard, Mouse
- 5.5. Printers:
  - 5.5.1. Impact: Dot Matrix, Chain, Drum
  - 5.5.2. Non-Impact: Inkjet, Laser
- 5.6. Plotters, Scanners, OCR, OMR
- 5.7. Monitors (CRT, Flat Screen LCD)

### Reference Books
1. How computer works: Ron White – Tech media
2. Introduction to Computers – Peter Norton
3. Fundamentals of Computers: V. Rajaraman
4. Introduction to Computer Science – Pearson Education

### Teaching Methodology
- Class Work, Discussion, Self-Study, Seminars and/or Assignments

### Evaluation Method
- 30% Internal assessment.
- 70% External assessment.
Course 104: Computer Programming & Programming Methodology

<table>
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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>Course Title</td>
<td>Computer Programming &amp; Programming Methodology</td>
</tr>
<tr>
<td>Credit</td>
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<td>Teaching per Week</td>
<td>4 Hrs</td>
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<tr>
<td>Minimum weeks per Semester</td>
<td>15 (Including class work, examination, preparation etc.)</td>
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<td>Review / Revision</td>
<td>June 2017</td>
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</table>

Purpose of Course
Computer programming (often shortened to programming) is a process that leads from an original formulation of a computing problem to executable computer programs. Programming involves activities such as analysis, developing, understanding, generating algorithms, verification of requirements of algorithms including their correctness, and implementation (commonly referred to as coding) of algorithms in a target programming language.

Course Objective
The object of this course is to introduce students the rudiments of computer programming and programming methodology using C language.

Pre-requisite
None

Course outcome
The students will be able to formulate a computing problem to executable computer program using C language.

Course Content

<table>
<thead>
<tr>
<th>Unit 1. Introduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 Algorithm and Flowchart</td>
</tr>
<tr>
<td>1.2 Structured Programming</td>
</tr>
<tr>
<td>1.3 Concepts of Compiler, Interpreter, Editor, Debugging &amp; Testing</td>
</tr>
<tr>
<td>1.4 Character Set</td>
</tr>
<tr>
<td>1.5 Identifiers, Key words, Data types</td>
</tr>
<tr>
<td>1.6 Constants and Variables – Needs &amp; Definition</td>
</tr>
</tbody>
</table>

Unit 2. Expression & Operators

2.1 Operators
- 2.1.1 Arithmetic Operators
- 2.1.2 Unary Operators
- 2.1.3 Relational Operators
- 2.1.4 Logical Operators
- 2.1.5 Assignment Operators
- 2.1.6 Conditional Operator

2.2 Expression
- 2.2.1 Arithmetic expression
- 2.2.2 Boolean expression

2.3 Evaluation & Assignment of Expression

Unit 3. Input/Output Statements & Built-in Functions

3.1. Formatted I/O statements (like `scanf`, `printf`)
3.2. Unformatted I/O statements (like `getchar()`, `getch()`, `getche()`, `putchar()`)
3.3. Mathematical Functions
3.4. String Functions
3.5. Conversion Functions

Unit 4. Control Statements

4.1. `if` statement
- 4.1.1. Simple `if` statement
- 4.1.2. `if...else` statement
4.1.3. Nested if statement  
4.2. while loop  
4.3. do...while loop  
4.4. for loop  
4.5. break and continue statements  
4.6. switch statement

**Unit 5. Arrays**

5.1. One Dimensional Arrays  
5.2. Sorting using One Dimensional Arrays  
5.3. Concept of Two Dimensional Arrays  
5.4. String- Array of characters  
5.5. String Manipulation

**Reference Books**

1. Programming in C, Balaguruswami – TMH  
2. C: How to Program, Deitel & Deitel - PHI  
3. C Programming Language, Kernigham & Ritchie - TMH  
5. Mastering Turbo C, Kelly & Bootle - BPB  
6. C Language Programming – Byron Gottfried - TMH  
7. Let us C, Yashwant Kanetkar - BPB Publication  
8. Magnifying C, Arpita Gopal - PHI  
9. Problem Solving with C, Somashekar - PHI  

**Teaching Methodology**

Class Work, Discussion, Self-Study, Seminars and/or Assignments

**Evaluation Method**

30% Internal assessment. 70% External assessment.
## Course 105: Office Automation Tools

<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>Course Title</td>
<td>Office Automation Tools</td>
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<tr>
<td>Credit</td>
<td>4</td>
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<tr>
<td>Teaching per Week</td>
<td>4 Hrs</td>
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<tr>
<td>Minimum weeks per Semester</td>
<td>15 (Including class work, examination, preparation etc.)</td>
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<td>Review / Revision</td>
<td>June 2017</td>
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</table>

### Purpose of Course
Use of modern office equipment in business or any office is intended to facilitate faster processing and delivery of information, accurate analysis of facts and figures, higher efficiency and productivity, and elimination of fatigue arising from performing repetitive jobs manually. Office Automation Tools help in Word processing, managing Worksheets and preparing Presentations.

### Course Objective
The objective of this course is to make students understand and learn various Office Automation Tools like Word processor, Spreadsheet program & Presentation program.

### Pre-requisite
Basic Knowledge of Computers

### Course outcome
The students will be able to use various Office Automation Tools like Word processor, Spreadsheet software & Presentation software.

### Course Content

#### Unit 1. Introduction
1.1. Concept of Windows, Icon, Menu  
1.2. Desktop  
1.3. Creating Folders and Shortcuts  
1.4. Finding Files & Folders  
1.5. Creating, Copying, Moving and Deleting files  
1.6. Windows Explorer  
1.7. Basic DOS Commands

#### Unit 2. Word Processor
2.1. Typing, Editing, Proofing & reviewing  
2.2. Formatting text & Paragraph  
2.3. Automatics Formatting and Styles  
2.4. Working with Tables  
2.5. Graphics and Frames  
2.6. Mail Merge

#### Unit 3. Spreadsheet Software
3.1. Concept of worksheet  
3.2. Working & Editing in Workbooks  
3.3. Creating Formats & Links  
3.4. Protecting and Hiding data  
3.5. Built in Functions (Mathematical, Statistical, String & Date)  
3.6. Formatting a Worksheet  
3.7. Creating Charts (Graphics), Formatting and Analysing data  
3.8. Organizing Data in a List (Data Management)  
3.9. Printing

#### Unit 4. Presentation Software
4.1. Creating and Editing Slides  
4.2. Creating and Editing objects in the slide  
4.3. Animation  
4.4. Creating and Running Slide Show  
4.5. Templates
## Unit 5. Internet

### 5.1. Concepts
### 5.2. Working
### 5.3. Mailing & surfing tools
### 5.4. Online Data Backup

3. The OpenOffice.org 2 Guidebook - Solveig Haugland  
6. PC Software for Windows 2003 Made Simple, - R K Taxali, - TMH  
7. 2007 Microsoft Office System Plain & Simple, Joyce & Moon, - PHI  
8. Internet 6 in 1 – Joe Krayuak & Harbraken, PHI  
9. Introduction to Computer Science-Pearson Education-ITL ESL  
10. Introduction to Computers-Peter Norton-The McGraw-Hill Companies |

| Teaching Methodology | Class Work, Discussion, Self-Study, Seminars and/or Assignments |
| Evaluation Method | 30% Internal assessment.  
70% External assessment. |
# Course 106: Practical

<table>
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<th>Course Code</th>
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<tbody>
<tr>
<td>Course Title</td>
<td>Practical</td>
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<td>Credit</td>
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<td>Teaching per Week</td>
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<td>Minimum weeks per Semester</td>
<td>15 (Including Class work, examination, preparation etc.)</td>
</tr>
<tr>
<td>Review / Revision</td>
<td>June 2017</td>
</tr>
</tbody>
</table>

**Purpose of Course**

Through practical implementation the students can understand & learn computer programming in a better way.

**Course Objective**

The objective of this course is to enable students to Solve Practical Problem in Courses 104 & 105.

**Pre-requisite**

Basic Programming Skills

**Course Out come**

After completion of this course, the students will be able to write programs in C language and also will be able to use Office Automation Tools.

**Course Content**

Practical based on Courses 104 and 105.

**Reference Book**

As per paper numbers 104 and 105

**Teaching Methodology**

Lab Work

**Evaluation Method**

30% Internal assessment.
70% External assessment.