

# SYLLABI

FOR

STANDARDS XI

(For the Higher Secondary Certificate Examination)

H. S. C. VOCATIONAL SUBJECTS

(Volume I)

COMPUTER TECHNOLOGY GROUP



Maharashtra State Board of Secondary and Higher Secondary Education,  
Pune – 411004

# **SYLLABI**

**FOR**

**STANDARDS XI**

**(For the Higher Secondary Certificate Examination)**

**(To be implemented in Standards XI for the  
Academic-year 2016-2017 )**

**H. S. C. VOCATIONAL SUBJECTS  
(Volume I)**

**COMPUTER TECHNOLOGY GROUP**



As sanctioned under Government of Maharashtra School Education and Sports Department.  
Letter No.

## H. S. C. Competency Vocational Subjects

### STANDARDS XI

### SCHEME OF TEACHING

| Sr. No. | Subjects  | Periods per week |           | Total |
|---------|---|------------------|-----------|-------|
|         |   | Theory           | Practical |       |
| 1.      | English   | 5                | --        | 5     |
| 2.      | A Modern Indian Language<br>Or<br>A Modern Foreign Language<br>Or<br>A Classical Language | 5                | --        | 5     |
| 3.      | Environmental Education   | 2                | --        | 2     |
| 4.      | General Foundation Course   | 5                | --        | 5     |
|         | VOCATIONAL SUBJECT<br>For subjects under -<br>Technology Group                            |                  |           |       |
| 5.      | Paper I: Office Automation (X4)   | 4                | 8         | 12    |
| 6.      | Paper II Desktop Publishing (X5)  | 4                | 8         | 12    |
| 7.      | Paper III Computer Hardware and Networking (X6)   | 4                | 8         | 12    |
|         | Total   | 29               | 24        | 53    |

# GENERAL FOUNDATION COURSE (90)

## Scheme of Examination

### Std. – XI

| Sr. | Title of the Paper              | Theory |                 | Practical |              | Visit  | Student  | Oral | Total |
|-----|---------------------------------|--------|-----------------|-----------|--------------|--------|----------|------|-------|
| No  |                                 | Marks  | Time (Hours)    | Marks     | Time (Hours) | Report | Activity |      | Marks |
| 1   | Employability Skill Development | 60     | 2 $\frac{1}{2}$ | -         | -            | 20     | 10       | 10   | 100   |
|     |                                 | 60     | -               | -         | -            | 20     | 10       | 10   | 100   |

**Note:**

20 marks are allotted for visit reports (Minimum Two visits (course related)) are required.

10 marks are allotted for Student Activity (Every student should prepare, and maintain file)

10 marks are allotted for oral.

**Std. XI**  
**Paper: Employability Skill Development**  
**Theory**

| <b>Sr. No.</b> | <b>Unit</b>         | <b>Sub Unit</b>   | <b>Periods</b> | <b>Student Activity</b>  |
|----------------|---------------------|---|----------------|--|
| 1              | Self Management     | 1.1 Identifying one's strength & weakness<br>1.2 Planning and goal setting.<br>1.3 Managing self-emotions, ego, pride   | 10             | Every student should prepare a list of self strength and self weakness                                     |
| 2              | Time Management     | 2.1 Time Management, concept<br>2.2 Attendance, discipline, and punctuality<br>2.3 Tools to plan the work (Time Management Matrix)  | 12             | Preparation of time schedule of a particular task.<br>a) Work – Game, learning<br>b) Day to day activities |
| 3              | Team Building       | 3.1 Concept of group<br>3.2 Group dynamics and team building  | 08             | Prepare a group to perform a task.   |
| 4              | Motivation          | 4.1 Motivation<br>4.2 Relationship between needs, drives and goals.<br>4.3 Objectives of Motivation.<br>4.4 Classification of Motivation.<br>4.5 Types of Motivation<br>4.6 Self Motivation | 14             | How to motivate a customer for purchasing your product?  |
| 5              | Ethics and Values   | 5.1 Concept of ethics and values<br>5.2 Factors of ethical behaviour.<br>5.3 Areas of ethical concern<br>5.4 Remedial measures and laws.  | 04             | Prepare a list of ethics and values socially accepted  |
| 6              | Interpersonal Skill | 6.1 Importance of interpersonal skill<br>6.2 Positive Relationship, Positive Attitude   | 09             | Group discussion on the interpersonal skill.   |
| 7              | Stress Management   | 7.1 Concept of Stress<br>7.2 Concept of Stress Management<br>7.3 Causes of Stress<br>7.4 Methods of stress relief.  | 08             | Arrange a lecture on stress relief –<br>a) Pranayam<br>b) Yoga<br>c) Music exercise etc<br>By using PPT.   |
| 8              | Interview           | 8.1 Concept of Interview<br>8.2 Types of Interview<br>8.3 Preparation for the interview   | 14             | Arrange a mock interview   |

|    |                               |  |    |   |
|----|-------------------------------|--|----|---|
|    |                               | 8.4 Dos and Don'ts in an interview   |    |   |
| 9  | Cross Occupational Competency | 9.1 Concept of cross occupational competency<br>9.2 Organiz and implementation of exercises related to<br>a) Communication and co-operation<br>b) Independency and responsibility.   | 11 | Mock sale and communication used therein for promoting sale.                                    |
| 10 | Quality Management            | 10.1 Meaning of Quality Management<br>10.2 Concepts of TPM – SGA<br>10.3 Concepts of TEM, ISO and QMS  | 12 | Arrange a visit to Study Small Group Activity<br>Collect information for ISO certification      |
| 11 | Safety and Health             | 11.1 Meaning of occupational safety and health<br>11.2 Concepts of occupational hazards, hygiene, ergonomic accidents<br>11.3 Prevention techniques & controlling of accidents<br>11.4 Important Acts related to safety & health<br>11.5 HIV/AIDS – Safety and precautions | 18 | Arrange a visit to observe safety precaution<br>Arrange a guest lecture of a Doctor on HIV/AIDS |

**Scheme of Examination  
Std. XI**

| Paper | Title of the Paper             | Theory |            | Practical |            | Term work | Project work | I.V.* | Total Marks |
|-------|--------------------------------|--------|------------|-----------|------------|-----------|--------------|-------|-------------|
|       |                                | Marks  | Time (Hrs) | Marks     | Time (Hrs) |           |              |       |             |
| 1     | Office Automation              | 80     | 3          | 80        | 3          | 20        | 10           | 10    | 200         |
| 2     | Desktop Publishing             | 80     | 3          | 80        | 3          | 20        | 10           | 10    | 200         |
| 3     | Computer Hardware & Networking | 80     | 3          | 80        | 3          | 20        | 10           | 10    | 200         |

\* IV = Industrial Visits

**Std. XI**  
**Paper I: Office Automation (X4)**  
**Theory**

| Sr. No. | Unit                     | Sub Unit  | Periods |
|---------|--------------------------|---|---------|
| 1.      | Introduction to Computer | 1.1 Basic Anatomy:<br>1.1.1. Characteristics of Computer<br>1.1.2. Classification of Computer<br>1.1.3. Generation of Computer<br>1.1.4. Data Representation  | 03      |
| 2.      | Operating System         | 2.1 Concept, Definition, Need<br>2.2 Overview of O.S<br>2.2.1. Feature of O.S<br>2.2.2. Types of O.S<br>2.2.3. Windows XP<br>2.2.4. Windows 7 and 8<br>2.2.5. LINUX   | 07      |
| 3.      | Advanced Office Suite    | 3.1 Word Processing<br>3.1.1. Creating Hyperlink Text<br>3.1.2. Inserting water mark<br>3.1.3. Importing files in other format<br>3.1.4. Creating symbolic shortcuts<br>3.1.5. Saving as a PDF<br><br>3.2 Spreadsheet<br>3.2.1. Get external data from webpage<br>3.2.2. Connect to (Import) external data from databases<br>3.2.3. Import Text (.txt or .csv) files<br>3.2.4. Creation Macros<br>3.2.5. Study of Pivot Table<br>3.3 Presentation<br>3.3.1. Combine shape tools<br>3.3.2. Use of picture crop<br>3.3.3. Save presentation as Video<br>3.3.4. Study of photo album | 20      |
| 4.      | Accounting Software      | 4.1. Introduction to Accounts<br>4.2. Advantages of computerized accounting<br>4.3. Introduction to Tally/Wings accounting/ Hisab/ Marg/<br>Gnucash/Busy and its features( <b>any one</b> )<br>4.4. Creation and configuration company menus  | 80      |



|    |          |   |            |
|----|----------|---|------------|
|    |          | related to Accounts<br>4.5. Creating, Displaying and Altering Groups<br>4.6. Creating, Displaying and Altering Ledgers<br>4.7. Voucher Entries<br>4.8. Displaying Trial Balance, Profit and Loss Account and Balance Sheet<br>4.9. Cost center  |            |
| 5. | Internet | 5.1. Internet Overview<br>5.1.1. WWW<br>5.1.2. Web server - Roll of Web Server and Client<br>5.1.3. Browsers - Internet Explorer, Mozilla Firefox<br>5.1.4. E-Mail<br>5.1.5. Messengers - Service and client and their features<br>5.2. Internet application<br>5.2.1. Reservation system<br>5.2.2. Online Banking<br>5.2.3. Online Shopping<br>5.2.4. Online Share trading | 10         |
|    |          | <b>Total</b>  | <b>120</b> |

## Practical

| Sr. No. | Unit                     | Sub Unit  | Periods  |
|---------|--------------------------|---|----------|
| 1.      | Introduction to Computer | 1) Familiarization with Different operating system.   | 06       |
| 2.      | Operating System         | 2) Study of installation any one operating system.<br>3) Study of control panel.  | 04<br>10 |
| 3.      | Advance Office Suite     | <b>Word Processing</b><br>4) Create a Word document with link, Insert image with properties.<br>5) Create a word document with table & charts.<br>6) Demonstration of Hyperlink file, saving as PDF, Inserting water mark.<br>7) Demonstration on importing file in other format and creating symbolic shortcuts.<br><b>Excel /Spreadsheet</b><br>8) Demonstration on macros.<br>9) Create an Excel workbook with two sheets using pivot table (using arithmetic or | 25       |

|    |          |  |                     |
|----|----------|--|---------------------|
|    |          | <p>trigonometric or logical formula).</p> <p>10) Demonstration on getting external data from web page.</p> <p>11) Demonstration on import (.txt or .csv) files.</p> <p><b>Power Point</b></p> <p>12) Creation of Power Point Presentation by using templates with custom slide transition effect and other special effects.</p> <p>13) Demonstration on Hyperlink and various sound and animation effects.</p> <p>14) Create a slide with text, image and animated effects and combine shape tools.</p> <p>15) Demonstration on picture editing by using different effects (crop, brightness etc.).</p> <p>16) Create a photo album on a specific topic with automatised transition.</p> | <p>25</p> <p>25</p> |
| 4. | Tally    | <p>4.1. Study of Tally Package (GATEWAY).</p> <p>4.2. Creation of Company using Tally.</p> <p>4.3. Study of Groups in Tally.</p> <p>4.4. Creation of Ledgers using Tally.</p> <p>4.5. Creation of vouchers for different trading organization.</p> <p>4.5. Creation of vouchers for different non-trading organization.</p> <p>4.6. Creation of cost center.</p>   | 130                 |
| 5. | Internet | <p>5.1. Internet Overview</p> <p>5.1.1 Search various websites</p> <p>5.1.2. Study the different browsers</p> <p>5.1.4. E-Mail to your friends</p> <p>5.1.5. Chat with your friends through Messengers</p>   | 15                  |
|    |          | <b>Total</b>   | <b>240</b>          |



|    |                 |   |    |
|----|-----------------|---|----|
|    |                 | <p>Image Fitting Options, Scaling and Cropping Images</p> <p>2.7 The Pages Panel- Inserting and Deleting Pages, Repositioning Document Pages, setting adding and deleting Master Pages, Auto page numbering</p> <p>2.8 Working with tables- adding and deleting rows and columns. Resizing Columns and Rows, Entering Content</p> <p>2.9 Exporting to PDF</p>   |    |
| 3. | CorelDraw       | <p>3.1 Introduction to CorelDraw</p> <p>3.2 Tools and menus</p> <p>3.2.1. Use of various tools such as pick tools, zoom tools, freehand tool, square tool, Rectangle tool text tool, fill tool etc. and all fonts used in design in monograms, logos, posters, stickers, greeting cards, wedding cards, visiting cards.</p> <p>3.2.2. Creating different types of drawings.</p> <p>3.3. Basic drawing working with text-basic</p> <p>3.4. Unit and Measurements (Pica, points, millimeters,</p> | 30 |
|    |                 | <p>centimeters etc ) 3.5 Page Layout</p> <p>3.6 Color schemes and matching</p> <p>3.7. News Papers layout (global standards)</p> <p>3.8 Printing.</p>   |    |
| 4. | Basic Photoshop | <p>4.1 Image Fundamentals: -</p> <p>4.1.1 Digital image pixel.</p> <p>4.1.2. Resolution.</p> <p>4.1.3 DPL,</p> <p>4.1.4 Raster image/bitmaps.</p> <p>4.1.5 Vector image/graphics.</p> <p>4.2. Various File Format:-</p> <p>4.3. Understanding Various Tools:-</p> <p>4.3.1 Marquee- Rectangular/Elliptical.</p> <p>4.3.2 Move Lasso, Polygonal Lasso, Magnetic Lasso,</p> <p>4.3.3 Magic wand.</p>  | 35 |

|    |                   |  |    |
|----|-------------------|--|----|
|    |                   | <p>4.3.4 Brushes and other tools</p> <p>4.3.5 Selection Techniques</p> <p>4.3.5 Tools</p>  |    |
| 5. | Advance Photoshop | <p>5.1. Understanding various Palettes:-</p> <p>5.1.1 Layers.</p> <p>5.2. Character Text and Paragraph formatting</p> <p>5.3. Status Bar and Option Bar.</p> <p>5.4. Modes.</p> <p>5.5. Image Display Options</p> <p>5.6.. Edit Commands:-</p> <p>5.6.1 Transform Preferences, Define Brush etc.</p> <p>5.7. Image Commands Inverse.</p> <p>Image Processing, Layers and Filtering effects</p> <p>View Commands.</p> <p>Print Option</p> | 25 |

**Total**

**120**

**Note:**

After completion of HSC vocational course (Computer Technology) most of the students do not continue their education they are interested in job or self employment so that they must know these professional softwares during the course.

## Practical

| Sr. No. | Unit                  | Sub Unit  | Periods |
|---------|-----------------------|---|---------|
| 1.      | Desktop<br>Publishing | 1. Study of various Book Binding Techniques   | 20      |
| 2.      | Adobe<br>Indesign     | 2. InDesign - use of tool box and creation of simple letterhead or identity card of your institute<br>3. InDesign – Design of a commercial color newspaper ad related to the exhibition of educational books in the size 2 columns x 10 cm.<br>4. Conversion of an Adobe InDesign Document into PDF (with and without Images) | 40      |
| 3.      | CorelDraw             | 5. Study of Units and Measurements in CorelDraw.<br>6. Study of Various tools used in CorelDraw<br>7. Page Layout and Design according to a sample newspaper in CorelDraw.<br>8. Graphic Import from different formats and Export to different formats in CorelDraw.<br>9. Text Wrap techniques around graphics.              | 65      |
| 4.      | Basic<br>Photoshop    | 10. Know the difference between Vector Graphics and Raster Graphics   | 65      |

|    |                    |  |            |
|----|--------------------|--|------------|
|    |                    | <p>11. Screen Graphics and Pixel Graphics.</p> <p>12. Understand the following formats :- .ai, .pdf, .eps, .svg, .svgz, .psd, .bmp, .gif, .jpg, .pcx, .pct, .png, .raw, .sct, .tga, .tiff, .vst.</p> <p>13. Working with Images in Photoshop. Working with Palettes, i.e., layers palette, navigator palette, info palette, color palette, Swatches palette, Styles palette, History palette, Actions Palette, Tool preset palette, Channels Palette and Path Palette.</p>   |            |
| 5. | Advanced Photoshop | <p>14. Working with Layers. Photo editing. Image adjustment options – Labels, Auto labels, Auto contrasts, Curves, Color balance, Brightness / Contrast, Posterize, Variations.</p> <p>15. Working with the magic wand tool, lasso tool and Symbol Sprayer Tool. Edit the images using options of Warp Tool. Using Dodge tool, Burn tool, Sponge Tool and Clone Stamp Tool.</p> <p>16. Creating images and giving special effects using Filters.</p> <p>17. Using Layer Styles - Produce an image by mixing two or more different images using Layer Masking &amp; Vector Masking.</p> | 50         |
|    |                    | <b>Total</b>   | <b>240</b> |

## Paper III: Computer Hardware and Networking (X6) Theory

| Sr. No. | Unit  | Sub Unit  | Periods |
|---------|-------|---|---------|
| 1.      | Basic | 1.1. Basic Electronic components<br>1.1.1. Significance of current, voltage, power, | 10      |

|    |  |   |    |
|----|--|---|----|
|    | Electronic components and Devices          | resistance and capacitors, diode, LED and transistors.<br>1.2. Input/ output Devices<br>1.2.1. Input Devices<br>1.2.2. Output Devices<br>1.3. Storage Devices:<br>1.3.1. Secondary Memory Installation and configurations<br>1.4. Introduction of cards:<br>1.4.1. Types of External Cards<br>1.4.2. Modem<br>1.5. Memory<br>1.5.1. Types of memories |    |
| 2. | Microprocessor Processors and Architecture | 2.1. Types of processors.<br>2.1.1 Architecture of 8085<br>2.1.2. Introduction to 8086<br>2.1.3. SCSI interface, serial (COM)ports, parallel (LTP) ports<br>2.1.4. USB connector, keyboard and PS/2, connector, CD, DVD<br>2.2. Motherboard and its installation<br>2.3. Power supply and its installation  | 15 |
| 3. | PC Servicing and maintenance               | 3.1 Assembling and Dismantling of PC<br>3.2. Troubleshooting of various input, output and storage devices,<br>3.3. Software installation and virus  |    |



|    |                              |   |            |
|----|------------------------------|---|------------|
|    |                              | <p>protection</p> <p>3.4 preventive maintenance</p> <p>3.5. Types of backup, fine tuning the system.</p>  | 25         |
| 4. | Networking and Communication | <p>4.1. Introduction to networking</p> <p>4.2. Types of network</p> <p>4.3. Types of communication</p> <p>4.4. Modes of communication</p> <p>4.5. Network Component</p> <p>4.6 Access Method</p> <p>4.7. Network Architecture</p> <p>4.8. Network Topology</p> <p>4.9. Ethernet</p> <p>4.10. Network Operating System</p> <p>4.11. VPN and IPV6</p> <p>4.12. Wired and Wireless Transmission Media</p> <p>4.13. Threats &amp; prevention from viruses, worms</p> <p>4.14. Hacking</p> <p>4.15. Proxy server</p> <p>4.16. Types of Server</p> <p>4.17. Network Protocol</p> <p>4.18. Network Troubleshooting</p> | 65         |
| 5. | Cyber Laws and Ethics        | <p>5.1. Moral, ethics &amp; laws</p> <p>5.2. Ethics culture &amp; ethics for computer user computer professional , business</p> <p>5.3. Code and guide lines of ethics.</p> <p>5.4. Introduction to cyber laws</p> <p>5.5. Intellectual property rights</p> <p>5.6. IT act( amendment 2008)</p>   | 05         |
|    |                              | <b>Total</b>  | <b>120</b> |

## Practical

| Sr. No. | Unit                                       | Sub Unit   | Periods |
|---------|--|--|---------|
| 1.      | Basic Electronic components and Devices    | 1. Identification (type, value, package, polarity) and testing of resistors, capacitors, diodes, transistors/ LED<br>2. Familiarization with different parts of Computer.<br>3. Installation of device drivers like printer, modem, scanner etc.   | 45      |
| 2.      | Microprocessor Processors and Architecture | 4. Assembling and Dismantling of Computer.<br>5. Formatting and Installation of different Operating Systems and other application software.<br>6. Fault finding and rectifying it.   | 35      |
| 3.      | PC Servicing and maintenance               | 7. Preventive Maintenance of Computer System.<br>8. Setting up a NIC (Network Interface Card) and assigning IP address and subnet<br>9. Defining a Domain Model on Windows Servers.  | 60      |
| 4.      | Networking and Communication               | 10. Setting up a Workgroup based network.<br>11. Setting up user level hierarchy with different security levels.<br>12. Sharing a Printer on the network for printing over the LAN.<br>13. Sharing different resources, files and folders with rights to specific users in a Domain Model.<br>14. Creation of various websites on a single Web Server and changing the Home Directory (WWW) of a IIS server. | 100     |

|    |                       |   |            |
|----|-----------------------|---|------------|
|    |                       | <p>15. Configuration of a Proxy Server for Internet Connection Sharing with Restricted Access.</p> <p>16. Configuration of a wireless network.</p> <p>17. Installation of Antivirus Software</p> <p>18. Creation of different users grant permissions to user.</p> <p>19. Installing firewall security.</p> <p>20. Installation of File server, Print server, Mail server etc.</p> <p>21. Demonstrate the use of different Networking protocols</p> <p>22. Demonstrate the process of network troubleshooting</p> |            |
| 5. | Cyber Laws and Ethics | -   |            |
|    |                       | <b>Total</b>  | <b>240</b> |