

**MRSPTU B.A. (COMPUTER SCIENCE)  
SYLLABUS 2023 BATCH ONWARDS**

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**Maharaja Ranjit Singh Punjab Technical University  
Bathinda-151001**



**FACULTY OF SCIENCES**

**SYLLABUS**

**FOR**

**B.A. (COMPUTER SCIENCE)**

**2023 BATCH ONWARDS**

**MRSPTU B.A. (COMPUTER SCIENCE)  
SYLLABUS 2023 BATCH ONWARDS**

| <b>SEMESTER 1<sup>st</sup></b>                |   | <b>Contact Hrs.</b> |          |          | <b>Marks</b> |             |              | <b>Credits</b> |
|---|---|---------------------|----------|----------|--------------|-------------|--------------|----------------|
| <b>Subject Code</b>                           | <b>Subject Name</b>   | <b>L</b>            | <b>T</b> | <b>P</b> | <b>Int.</b>  | <b>Ext.</b> | <b>Total</b> |                |
| <b>BACSS1-101</b>                             | General English - I   | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSS1-102</b>                             | General Punjabi – I   | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSS1-103</b>                             | Introduction Information<br>Technology And Office Automation          | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSS1-104</b>                             | Introduction Information<br>Technology And Office Automation<br>(Lab) | 0                   | 0        | 4        | 40           | 60          | 100          | 2              |
| <b>Department Elective Subjects (Any Two)</b> |   |                     |          |          |              |             |              |                |
| <b>BACSD1-111</b>                             | History – I   | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSD1-112</b>                             | Political Science – I   | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSD1-113</b>                             | Mathematics – I   | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSD1-114</b>                             | Physical Education – I  | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSD1-115</b>                             | Elective English – I  | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSD1-116</b>                             | Economics – I   | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSD1-117</b>                             | Elective Punjabi - I  | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSD1-118</b>                             | Sociology - 1   | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSD1-119</b>                             | Elective Computer - I   | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>Total</b>                                  |   | <b>20</b>           | <b>0</b> | <b>4</b> | <b>240</b>   | <b>360</b>  | <b>600</b>   | <b>22</b>      |

| <b>SEMESTER 2<sup>nd</sup></b>                |   | <b>Contact Hrs.</b> |          |          | <b>Marks</b> |             |              | <b>Credits</b> |
|---|---|---------------------|----------|----------|--------------|-------------|--------------|----------------|
| <b>Subject Code</b>                           | <b>Subject Name</b>                         | <b>L</b>            | <b>T</b> | <b>P</b> | <b>Int.</b>  | <b>Ext.</b> | <b>Total</b> |                |
| <b>BACSS1-201</b>                             | General English - II                        | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSS1-202</b>                             | General Punjabi – II                        | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSS1-203</b>                             | Trends in IT and Office automation          | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSS1-204</b>                             | Trends in IT and Office automation<br>(Lab) | 0                   | 0        | 4        | 40           | 60          | 100          | 2              |
| <b>Department Elective Subjects (Any Two)</b> |   |                     |          |          |              |             |              |                |
| <b>BACSD1-211</b>                             | History – II                                | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSD1-212</b>                             | Political Science – II                      | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSD1-213</b>                             | Mathematics (Algebra) - II                  | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSD1-214</b>                             | Physical Education – II                     | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSD1-215</b>                             | Elective English – II                       | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSD1-216</b>                             | Economics – II                              | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSD1-217</b>                             | Elective Punjabi – II                       | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSD1-218</b>                             | Sociology - II                              | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSD1-219</b>                             | Elective Computer - II                      | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>Total</b>                                  |   | <b>20</b>           | <b>0</b> | <b>4</b> | <b>240</b>   | <b>360</b>  | <b>600</b>   | <b>22</b>      |

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| <b>SEMESTER 3<sup>rd</sup></b>                |   | <b>Contact Hrs.</b> |          |          | <b>Marks</b> |             |              | <b>Credits</b> |
|---|---|---------------------|----------|----------|--------------|-------------|--------------|----------------|
| <b>Subject Code</b>                           | <b>Subject Name</b>                               | <b>L</b>            | <b>T</b> | <b>P</b> | <b>Int.</b>  | <b>Ext.</b> | <b>Total</b> |                |
| <b>BACSS1-301</b>                             | General English – III                             | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSS1-302</b>                             | General Punjabi – III                             | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSS1-303</b>                             | Computer networks and internet applications       | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSS1-304</b>                             | Computer networks and internet applications (Lab) | 0                   | 0        | 4        | 40           | 60          | 100          | 2              |
| <b>Department Elective Subjects (Any Two)</b> |   |                     |          |          |              |             |              |                |
| <b>BACSD1-311</b>                             | History – III                                     | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSD1-312</b>                             | Political Science – III                           | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSD1-313</b>                             | Mathematics (Calculus) - III                      | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSD1-314</b>                             | Physical Education – III                          | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSD1-315</b>                             | Elective English – III                            | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSD1-316</b>                             | Economics – III                                   | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSD1-317</b>                             | Elective Punjabi – III                            | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSD1-318</b>                             | Sociology - III                                   | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSD1-319</b>                             | Elective Computer - III                           | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>Total</b>                                  |   | <b>20</b>           | <b>0</b> | <b>4</b> | <b>240</b>   | <b>360</b>  | <b>600</b>   | <b>22</b>      |

| <b>SEMESTER 4<sup>th</sup></b>                |  | <b>Contact Hrs.</b> |          |          | <b>Marks</b> |             |              | <b>Credits</b> |
|---|--|---------------------|----------|----------|--------------|-------------|--------------|----------------|
| <b>Subject Code</b>                           | <b>Subject Name</b>                    | <b>L</b>            | <b>T</b> | <b>P</b> | <b>Int.</b>  | <b>Ext.</b> | <b>Total</b> |                |
| <b>BACSS1-401</b>                             | General English – IV                   | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSS1-402</b>                             | General Punjabi – IV                   | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSS1-403</b>                             | Multimedia & its applications          | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSS1-404</b>                             | Multimedia & its applications (Lab)    | 0                   | 0        | 4        | 40           | 60          | 100          | 2              |
| <b>Department Elective Subjects (Any Two)</b> |  |                     |          |          |              |             |              |                |
| <b>BACSD1-411</b>                             | History – IV                           | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSD1-412</b>                             | Political Science – IV                 | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSD1-413</b>                             | Mathematics (Analytical Geometry) - IV | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSD1-414</b>                             | Physical Education – IV                | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSD1-415</b>                             | Elective English – IV                  | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSD1-416</b>                             | Economics – IV                         | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSD1-417</b>                             | Elective Punjabi – IV                  | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSD1-418</b>                             | Sociology - IV                         | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSD1-419</b>                             | Elective Computer – IV                 | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>Total</b>                                  |  | <b>20</b>           | <b>0</b> | <b>4</b> | <b>240</b>   | <b>360</b>  | <b>600</b>   | <b>22</b>      |

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| <b>SEMESTER 5<sup>th</sup></b>                |   | <b>Contact Hrs.</b> |          |          | <b>Marks</b> |             |              | <b>Credits</b> |
|---|---|---------------------|----------|----------|--------------|-------------|--------------|----------------|
| <b>Subject Code</b>                           | <b>Subject Name</b>                     | <b>L</b>            | <b>T</b> | <b>P</b> | <b>Int.</b>  | <b>Ext.</b> | <b>Total</b> |                |
| <b>BACSS1-501</b>                             | General English – V                     | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSS1-502</b>                             | General Punjabi – V                     | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSS1-503</b>                             | Software Engineering                    | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSS1-504</b>                             | Software Engineering (Lab)              | 0                   | 0        | 4        | 40           | 60          | 100          | 2              |
| <b>Department Elective Subjects (Any Two)</b> |   |                     |          |          |              |             |              |                |
| <b>BACSD1-511</b>                             | History – V                             | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSD1-512</b>                             | Political Science – V                   | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSD1-513</b>                             | Mathematics (Differential Geometry) - V | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSD1-514</b>                             | Physical Education – V                  | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSD1-515</b>                             | Elective English – V                    | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSD1-516</b>                             | Economics – V                           | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSD1-517</b>                             | Elective Punjabi – V                    | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSD1-518</b>                             | Sociology - V                           | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSD1-519</b>                             | Elective Computer – V                   | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>Total</b>                                  |   | <b>20</b>           | <b>0</b> | <b>4</b> | <b>240</b>   | <b>360</b>  | <b>600</b>   | <b>22</b>      |

| <b>SEMESTER 6<sup>th</sup></b>                |   | <b>Contact Hrs.</b> |          |          | <b>Marks</b> |             |              | <b>Credits</b> |
|---|---|---------------------|----------|----------|--------------|-------------|--------------|----------------|
| <b>Subject Code</b>                           | <b>Subject Name</b>   | <b>L</b>            | <b>T</b> | <b>P</b> | <b>Int.</b>  | <b>Ext.</b> | <b>Total</b> |                |
| <b>BACSS1-601</b>                             | General English – VI  | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSS1-602</b>                             | General Punjabi – VI  | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSS1-603</b>                             | Introduction to Computer Network and Internet Programming       | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSS1-604</b>                             | Introduction to Computer Network and Internet Programming (Lab) | 0                   | 0        | 4        | 40           | 60          | 100          | 2              |
| <b>BACSS1-605</b>                             | Human Values and Professional Ethics                            | 3                   | 0        | 0        | 40           | 60          | 100          | 3              |
| <b>Department Elective Subjects (Any Two)</b> |   |                     |          |          |              |             |              |                |
| <b>BACSD1-611</b>                             | History – VI  | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSD1-612</b>                             | Political Science – VI  | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSD1-613</b>                             | Mathematics (Analysis) - IV                                     | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSD1-614</b>                             | Physical Education – VI   | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSD1-615</b>                             | Elective English – VI   | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSD1-616</b>                             | Economics – VI  | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSD1-617</b>                             | Elective Punjabi – VI   | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSD1-618</b>                             | Sociology - VI  | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>BACSD1-619</b>                             | Elective Computer – VI  | 4                   | 0        | 0        | 40           | 60          | 100          | 4              |
| <b>Total</b>                                  |   | <b>23</b>           | <b>0</b> | <b>4</b> | <b>280</b>   | <b>420</b>  | <b>700</b>   | <b>25</b>      |

**MRSPTU B.A. (COMPUTER SCIENCE)  
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| <b>Semester</b>            | <b>Marks</b> | <b>Credits</b> |
|----------------------------|--------------|----------------|
| Semester – 1 <sup>st</sup> | 600          | 22             |
| Semester – 2 <sup>nd</sup> | 600          | 22             |
| Semester – 3 <sup>rd</sup> | 600          | 22             |
| Semester – 4 <sup>th</sup> | 600          | 22             |
| Semester – 5 <sup>th</sup> | 600          | 22             |
| Semester – 6 <sup>th</sup> | 700          | 25             |
| <b>Total</b>               | <b>3700</b>  | <b>135</b>     |

**PROGRAM OUTCOMES (POS)**

- PO1. The program enables the students to acquire communication efficacy which would help them to communicate effectively with the community as well as society.
- PO2. The students acquire knowledge in the field of social sciences, literature and humanities. Which make them sensitive and sensible enough?
- PO3. The program also empowers the graduates to appear for various competitive examinations or choose the post graduate programme of their choice.
- PO4. The program enables the students to acquire the knowledge with human values.
- PO5. The students will be kindled enough to think and act over for the solution of various issues prevailed in the human life.
- PO6. Programme provides the base to be the responsible citizen.

# **SEMESTER - I**

**MRSPTU B.A. (COMPUTER SCIENCE)  
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**GENERAL PUNJABI - I**

**Subject Code: BACSS1-102**

**L T P C  
4 0 0 4**

**Duration: 60 Hrs.**

**Course Outcomes (Cos) and mapping with program outcomes (POs)**

| COs | Course Outcomes  | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 |
|-----|--|-----|-----|-----|-----|-----|-----|
| CO1 | <b>Language Skills:</b> Enhance reading, writing, listening, and speaking skills in Punjabi        | 3   | 1   | 2   |     |     |     |
| CO2 | <b>Vocabulary and Grammar:</b> Learn essential Punjabi vocabulary and grammar rules                | 3   |     | 2   |     |     |     |
| CO3 | <b>Writing Skills:</b> Learn to write short essays, paragraphs, and simple compositions in Punjabi | 3   |     | 2   |     | 1   |     |
| CO4 | <b>Reading Comprehension:</b> Improve the ability to read and understand Punjabi Poems             | 2   |     | 1   | 2   |     |     |

**ਪਾਠਕ੍ਰਮ**

1. ਅਧੁਨਿਕ ਪੰਜਾਬੀ ਕਵਿਤਾ ਦਾ ਅਧਿਐਨ
2. ਲੇਖ ਰਚਨਾ
3. ਵਿਆਕਰਨ: ਸਿਧਾਂਤ ਅਤੇ ਵਿਹਾਰ

**ਯੂਨਿਟ – I (15 Hrs)**

(ੳ) ਕਾਵਿ ਸੁਮੇਲ ਪੁਸਤਕ ਵਿਚੋਂ ਪ੍ਰਸੰਗ ਸਹਿਤ ਵਿਆਖਿਆ।  
(ਅ) ਕਵਿਤਾ ਦਾ ਕੇਂਦਰੀ ਭਾਵ।

**ਯੂਨਿਟ – II (15 Hrs)**

ਲੇਖ ਰਚਨਾ 500 ਸ਼ਬਦਾਂ ਵਿੱਚ ਚਲੰਤ ਮਸਲਿਆਂ ਤੇ।

**ਯੂਨਿਟ – III (15 Hrs)**

ਵਿਆਕਰਨ ਦੀ ਪਰਿਭਾਸ਼ਾ , ਮਹੱਤਵ।

**ਯੂਨਿਟ – IV (15 Hrs)**

ਵਿਹਾਰਕ ਪ੍ਰਸ਼ਨ।

**• Recommended Books:-**

- (i) ਕਾਵਿ-ਸੁਮੇਲ (ਸੰਪਾਦਕ) ਡਾ. ਕਰਮਜੀਤ ਸਿੰਘ, ਪਬਲੀਕੇਸ਼ਨ ਬਿਊਰੋ।
  - (ii) ਸੁਹਾਇਕ ਪੁਸਤਕਾਂ : ਬਰਾੜ, ਬੁਟਾ ਸਿੰਘ (ਡਾ.), ਪੰਜਾਬੀ ਵਿਆਕਰਨ ਸਿਧਾਂਤ ਅਤੇ ਵਿਹਾਰ ਚੇਤਨਾ ਪ੍ਰਕਾਸ਼ਨ ਲੁਧਿਆਣਾ 2008।
  - (iii) ਮਨਜੀਤ ਕੌਰ, ਪੰਜਾਬੀ ਭਾਸ਼ਾ : ਵਰਤੋਂ ਤੇ ਬਣਤਰ, ਲੋਕ ਗੀਤ ਪ੍ਰਕਾਸ਼ਨ, ਚੰਡੀਗੜ੍ਹ।
1. ਜੱਸਲ ਕੰਵਰਜੀਤ, ਪੰਜਾਬੀ ਵਿਆਕਰਨ ਦੇ ਕੁਝ ਪੱਖ, ਰਵੀ ਸਾਹਿਤ ਪ੍ਰਕਾਸ਼ ਨਹਾਲ ਬਜਾਰ ਅਮ੍ਰਿਤਸਰ 2012

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**GENERAL ENGLISH- I**

**Subject Code: BACSS1-101**

**L T P C  
4 0 0 4**

**Duration: 60 Hrs.**

**Course Outcomes (Cos) and mapping with program outcomes (POs)**

| COs | Course Outcomes   | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 |
|-----|---|-----|-----|-----|-----|-----|-----|
| CO1 | <b>Language Proficiency:</b> Develop proficiency in the English Language                          | 3   | 2   | 2   |     | 1   |     |
| CO2 | <b>Vocabulary and Grammar:</b> Learn essential English vocabulary and grammar rules               | 3   |     | 2   |     |     |     |
| CO3 | <b>Writing Skills:</b> Learn to write paragraphs in English                                       | 3   |     | 2   |     | 1   |     |
| CO4 | <b>Reading Comprehension:</b> Improve the ability to read and understand English Poetry and Prose | 2   |     | 1   | 2   |     |     |

**UNIT-1 Peotry (15 Hrs.)**

1. Song 36 from Gitanjali – Rabindernath Tagore.
2. Pippa's song - Robert Browning.
3. women's rights annie lennox walker.
4. The soul's prayer - Sarojini naidu.

**UNIT-2 Prose (15 Hrs.)**

1. Spoken English and broken English – G.B shaw.
2. Garif – Antor Chekov.
3. Uncle podger hangs a picture -Jerome k Jerome.
4. The doll's house - Katherine Mansfield.

**UNIT-3 (15 Hrs.)**

1. Paragraph writing –Discriptive & Narrative?
2. Comprehensiom of passage prose text.

**UNIT-4 (15 Hrs.)**

- i.) Grammer →voice,Determiner,modals,antonyms.
- ii.) Translation→ from varnacular to English (four out of six sentences)

**Textbook:-**

- i.) The poetic palatte (orient blackswan, for-1/2Sem Second edition, 2016)
- ii.) Prose parables (orient black swan,2013)
- iii.) English at work (selection from poetry & prose Vijay kumar, B.T. Seetha, A.V Suresh Kumar, Y.L. Srinivas, New Delhi; Macmillan, India Ltd.2012 (Punjab University) revised edition.



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**INTRODUCTION INFORMATION TECHNOLOGY AND OFFICE AUTOMATION**

Subject Code: BACSS1-103

L T P C  
4 0 0 4

Duration: 60 Hrs.

**Course Outcomes (Cos) and mapping with program outcomes (POs)**

| COs | Course Outcomes   | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 |
|-----|---|-----|-----|-----|-----|-----|-----|
| CO1 | <b>IT Fundamentals:</b> Introduce students to the basic principles and concepts of information technology like hardware, software, networks, Input devices and output devices |     |     | 3   |     | 2   |     |
| CO2 | <b>Office Automation Tools:</b> Familiarize students with commonly used office automation tools such as word processors, spreadsheets and email applications                  |     |     | 2   |     | 3   |     |
| CO3 | <b>Internet and Web Browsing:</b> Acquaint students to internet usage and web browsing  | 1   |     | 3   |     | 3   |     |

**UNIT-I (15 Hrs.)**

**Computer Fundamentals:** Block diagram of a Computer, Characteristics of Computers, Hardware, Software, Machine Language, Assembly Language and Assembler, High Level Language and Compiler v/s Interpreter.

**Computer software:** Types of software, application software and system software.

**Input Devices:** Keyboard, Mouse, Joystick, Track Ball, Touch Screen, Light Pen, Digitizer, Scanners, monitors, printers, plotters.

**Output Devices:** Monitors, Impact Printers - Dot matrix, Character and Line printer, non impact Printers – DeskJet and Laser printing, Plotter

**UNIT-II(15 Hrs.)**

**Memories:** Memories: Main Memories - RAM ROM and Secondary Storage Devices - Hard Disk, Compact Disk and DVD.

**File Manipulation:** Creating, Deleting, copying, renaming file.

**Introduction to Internet:** Evolution of Internet, Internet Applications, WWW, E-mail, FTP, TELNET, Web Browsers.

**UNIT-III (15 Hrs.)**

**Word Processing Tool:** Salient features of Word Processing, File, Edit, View, Insert, Format, Tools, Tables, Window, help options and all of their features, Options and Sub Options etc.,

**Windows:** Windows concept, Features, Desktop, Windows, And Accessories: Paint, Notepad, WordPad etc, Window Explorer, And Organization of data in Windows.

**UNIT-IV (15 Hrs.)**

**Presentation Tool:** Making Presentations, Inserting Objects, and Animations.

**Spreadsheet Tool:** Excel Worksheet, Data Entry, Editing, Cell Addressing ranges, Commands, Menus, Copying & Moving Cell Content, Inserting and Deleting Rows and Column, Column formats, Cell Protection, Printing, Creating, Displaying and Printing Graphs, Statistical Functions.

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**Recommended Books:**

1. V. Rajaraman, 'Fundamentals of Computers', 5th Edn., PHI, 2010.
2. Satish Jain, 'Information Technology Concepts', ns, 4th Edn., BPB Publications, 2006.
3. Turban, Mclean and Wetherbe, 'Information Technology for Management', 4th Edn., John Wiley & Sons, 2006.
4. G. Courter, 'Mastering MS Office 2000 Professional', 3rd Edn., BPB Publication, 2006.
5. Steve Sagman, 'MS Office 2000 For Windows', 3rd Edn., Addison Wesley, 2008.

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**HISTORY – I**

**Subject Code: BACSD1-111**

**L T P C  
4 0 0 4**

**Duration: 60 Hrs.**

**Course Outcomes (Cos) and mapping with program outcomes (POs)**

| COs | Course Outcomes   | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 |
|-----|---|-----|-----|-----|-----|-----|-----|
| CO1 | <b>Chronological Understanding:</b> Develop a chronological understanding of Ancient Indian History   |     | 2   | 3   |     | 1   |     |
| CO2 | <b>Civilizations and Empires:</b> Study the rise and fall of significant ancient civilizations and empires in India, such as the Indus Valley Civilization, Maurya Empire, Gupta Empire, etc. |     | 1   |     | 1   | 1   |     |
| CO3 | <b>Cultural and Religious Heritage:</b> Explore contribution of different religions like Jainism and Buddhism   |     |     |     | 1   | 1   | 1   |

**UNIT– I (15 Hrs.)**

Ancient Indian History and its Importance, Physical Features and Impact, Sources of Early Indian History.

ਪ੍ਰਾਚੀਨ ਭਾਰਤ ਦਾ ਇਤਿਹਾਸ ਅਤੇ ਮਹੱਤਵ , ਭਾਰਤ ਦੀਆਂ ਭੂਗੋਲਿਕ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ , ਪ੍ਰਭਾਵ , ਪ੍ਰਾਚੀਨ ਭਾਰਤ ਦੇ ਸੋਮੇ।

**UNIT– II (15 Hrs.)**

Indus Valley Civilizations or Harappa Culture, The Early Vedic Age, Later Vedic Age.

ਸਿੰਧੂ ਘਾਟੀ ਦੀ ਸਭਿਅਤਾ ਜਾਂ ਹੜੱਪਾ ਸੰਸਕ੍ਰਿਤੀ, ਮੁੱਢਲਾ ਵੈਦਿਕ ਕਾਲ, ਉੱਤਰ ਵੈਦਿਕ ਕਾਲ।

**UNIT– III (15 Hrs.)**

Jainism and Buddhism, Alexander's Invasion of India, The Maurya Empire, The Kushana Empire, The Gupta Empire

ਜੈਨ ਧਰਮ ਅਤੇ ਬੁੱਧ ਧਰਮ , ਸਿੰਕਦਰ ਦਾ ਭਾਰਤ ਉੱਤੇ ਹਮਲਾ , ਮੌਰੀਆ ਸਾਮਰਾਜ , ਕੁਸ਼ਾਣ ਸਮਰਾਜ , ਗੁਪਤ ਸਮਰਾਜ।

**UNIT– IV (15 Hrs.)**

Harsha Vardhana and His Time, Principal Dynasties of South India, Origin and Rise of the Rajputs.

ਹਰਸ਼ਵਰਧਨ ਅਤੇ ਉਸਦਾ ਸਮਾਂ , ਦੱਖਣੀ ਭਾਰਤ ਦੇ ਮਹੱਤਵਪੂਰਣ ਰਾਜਵੰਸ਼ , ਰਾਜਪੂਤਾਂ ਦੀ ਉਤਪੱਤੀ ਅਤੇ ਉਥਾਨ।

**Books: -**

ਪ੍ਰਾਚੀਨ ਭਾਰਤ ਦਾ ਇਤਿਹਾਸ) Ancient History of India) Writer Dr. A.C. Arora  
A.D. : - (Starting to 1200 CE)

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**POLITICAL SCIENCE - I**

**Subject Code: BACSD1-112**

**L T P C  
4 0 0 4**

**Duration: 60 Hrs.**

**Course Outcomes (Cos) and mapping with program outcomes (POs)**

| COs | Course Outcomes  | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 |
|-----|--|-----|-----|-----|-----|-----|-----|
| CO1 | <b>Introduction:</b> Familiarize students with the discipline of political science, theories of origin of states |     | 2   | 3   |     |     | 1   |
| CO2 | <b>Political Thinkers:</b> To acquaint students to the concepts of various political thinkers and philosophers   |     | 2   | 2   | 1   |     | 1   |
| CO3 | <b>Political Theories and Ideologies:</b> Explore major political theories and ideologies                        |     |     | 3   | 1   | 1   |     |

**UNIT – I (15 Hrs.)**

- Political Theory – Ancient, Traditional and Modern - Distinction between Political Theory and Political Science.
- Relationship of Political Science with Social Sciences.

**UNIT – II (15 Hrs.)**

- The State : Meaning and Its Elements - distinction Between State and society.
- Theories of the origin of State: - Social Contract theory and Historical Evolutionary Theory.

**UNIT – III (15 Hrs.)**

- Liberal, Maximalist and Gandhian View of State function of state - Socialist Perspective
- Functions of state: Liberal Theory Welfare State : Concept and functions

**UNIT – IV (15 Hrs.)**

- Sovereignty Meaning - Sovereignty and Its Monistic Theory, Austin theory of Sovereignty
- Pluralistic Theory of Sovereignty and Political Systems: Main Element of Political System, Main Structure of Political System.

**Recommended Books:**

1. Political Theory – J.S. Badyal, Raj Publications
2. Comparative Political System and International Politics – J.S. Badyal

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**MATHEMATICS -I**

**Subject Code: BACSD1-113**

**L T P C  
4 0 0 4**

**Duration: 60 Hrs.**

**Course Outcomes (Cos) and mapping with program outcomes (POs)**

| COs | Course Outcomes  | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 |
|-----|--|-----|-----|-----|-----|-----|-----|
| CO1 | <b>Graphing and Functions:</b> Develop an understanding of graphing techniques and functions to visualize and analyze mathematical relationships |     |     | 3   |     | 2   |     |
| CO2 | <b>Probability and Statistics:</b> Introduce students to probability theory and basic analysis and interpretation                                |     | 1   | 2   |     | 3   |     |
| CO3 | <b>Calculus Concepts:</b> Introduce fundamental concepts of calculus   |     |     | 2   |     | 2   |     |

**UNIT-I (15 Hrs.)**

Set Theory: Sets, Type of sets, set operations, Principle of Inclusion-Exclusion, Cartesian product of sets, Partitions.

Logic: Propositions, Implications, Precedence of logical operators, Truth table, Arguments and validity of arguments, equivalence and implication laws of logic, Principle of Mathematical induction.

Relations: Relations and diagraph, n-ary relations and their applications, properties of relations, representing relations, closure of relation, equivalence relation, operation on relations, partial ordering. Functions: Functions, One-to-one Functions, Onto Functions, Inverse and Composition of Functions, Floor Function, Ceiling Function.

**UNIT-II (15 Hrs.)**

Integration by Partial fractions, integration of rational and irrational functions, Properties of definite integral, Reduction formulae for integrals of rational, trigonometric, exponential and logarithmic function and of their combinations.

**UNIT-III(15 Hrs.)**

Graph Theory. Graphs: Introduction to Graph, Graph terminology, Representing graphs and Graph Isomorphism, Connectivity, Euler Paths and Circuits, Hamiltonian paths and circuits, Shortest Path Problems, Planar Graphs.

Trees: Trees, labeled trees, Tree Traversal, Undirected trees, Spanning Trees, Minimum spanning trees.

**UNIT-IV(15 Hrs.)**

Probability: Definition, Addition law of Probability, Multiplication law, Binomial Distribution, Poisson distribution, Normal Distribution

Statistics and Applications of Logarithms: Introduction to Statistics, Measures of Central Tendency- Mean, Median and Mode, Measures of Dispersion, Mean Deviation, Standard Deviation and Coefficient of Variation. Problems related to Compound Interest, Depreciation and Annuities.

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**PHYSICAL EDUCATION - I**

**Subject Code: BACSD1-114**

**L T P C**

**Duration: 60 Hrs.**

**4 0 0 4**

**Course Outcomes (Cos) and mapping with program outcomes (POs)**

| COs | Course Outcomes   | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 |
|-----|---|-----|-----|-----|-----|-----|-----|
| CO1 | <b>Physical Fitness:</b> Improve the understanding of Physical Fitness concepts and practice  |     |     | 2   |     | 3   | 1   |
| CO2 | <b>Motor Skills Development:</b> Enhance the students' motor skills like running, jumping, throwing, catching, kicking and other fundamental movement |     |     | 2   |     | 2   |     |
| CO3 | <b>Teamwork and Cooperation:</b> Promote teamwork, cooperation, and sportsmanship through various sports and group activities                         | 1   |     | 2   |     | 1   | 1   |
| CO4 | <b>Health Awareness:</b> Raise awareness about the importance of regular physical activity for maintaining overall health                             |     |     | 1   |     | 3   |     |
| CO5 | <b>Physical Education and Lifelong Activity:</b> Foster an understanding of the importance of lifelong  |     | 1   |     |     | 1   | 1   |

**(THEORY – 60 MARKS)**

**UNIT – I (15 Hrs.)**

- **Physical Education:** Introduction, Objectives, Scope and Importance of Physical Education in the modern society.
- **Health Education:** Introduction, Aim & objectives, Principles and its Importance.
- **Olympic Games:** Introduction, Organization, Administration and Ceremonies of Ancient and Modern Olympic Games.
- **Asian & Commonwealth Games:** Introduction, Ceremonies, Venues.

**UNIT – II(15 Hrs.)**

- **Growth and Development:** Introduction, Difference, Development Characteristics at Different stages of Development and factors affecting growth & Development.
- **Heredity and Environment:** Introduction, Effect of Heredity & Environment on Growth & development, Chronological age, Anatomical age and Physiological age.
- **Personal Hygiene:** Introduction, Personal Cleanliness, Rest, Relaxation and Sleep.

**UNIT – III(15 Hrs.)**

- **Terminologies of Physical Education:** Kinesiology, Anatomy, Physiology Exercise Physiology, Bio Mechanics, Anthropometry and Sports Medicine.
- **Cell:** Structure, Parts and its Function.
- **Digestive System** : Introduction, Structure, Organs & Functions of Digestive System

**UNIT – IV(15 Hrs.)**

- **Athletics:** Introduction, Classification of Events, General Rules of Track Events and Types of Start & Finish.
- **Football:** History, Laws of the Game, Major tournaments and Arjuna Awardees.
- **Volleyball:** History, Layout, General Rules and Regulation, Officials, Major Tournaments and Arjuna Awardees.

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**PRACTICAL (40 MARKS)**

**VOLLEYBALL, FOOTBALL AND SPRINTS (ATHLETICS)**

Evaluation will be based on skill test, Performance, Practical file and Viva Voce.

**Recommended Books:**

1. Dr. Nishan Singh Deol (1980): Text Book of Physical Education & Sports. (AP Publishers, Jalandhar)
2. Singh Ajmer et al (2000): Modren Text book of Physical Edcation, Health and Sports, Kalyani Publishers, Ludhiana.

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**ELECTIVE ENGLISH – I**

**Subject Code: BACSD1-115**

**L T P C  
4 0 0 4**

**Duration: 60 Hrs.**

| COs | Course Outcomes  | PO 1 | PO 2 | PO 3 | PO 4 | PO 5 | PO 6 |
|-----|--|------|------|------|------|------|------|
| CO1 | <b>Improving Language Proficiency:</b> Enhance overall language skills, including speaking, listening, reading, and writing, to communicate effectively in English |      |      | 2    |      | 3    | 1    |
| CO2 | <b>Grammar and Vocabulary:</b> Develop a solid understanding of English grammar rules  |      |      | 2    |      | 2    |      |
| CO3 | <b>Writing Skills:</b> Develop the ability to write clear, coherent, and organized letters   | 1    |      | 2    |      | 1    | 1    |

**UNIT-I (15 Hrs.)**

- Literary Terms: ballad ode, sonnet. Dramatic Monologue, Interior Monologue, Blank verse, free verse, Mock Epic. Metaphysical Conceit, Negative capability, Egotistical sublime, fancy, imagination, Irony, Paradox, Ambiguity, Alliteration, Assonance, Imagery.

**UNIT-II (15 Hrs.)**

- letter writing- official
- Applied Grammar - Voice, Direct Indirect

**UNIT-III (15 Hrs.)**

- Transformation of Sentences- Simple compound complex,
- Articles, Proposition, conjunctions
- Vocabulary - Antonyms/Synonym,
- Uses of words Phrases in English.

**UNIT-IV (15 Hrs.)**

- Text Prescribed from Fluency in English.
  - (a) Inzy Lets things Flow over Him. - Kadamba Murali
  - (b) Haroun and the sea of stories. : Salman Rushdil.
  - (c) Sisters-Poem : Saleem Peeradina
  - (d) Understanding Satire - A Ten Day Test: Harishanker Passai
  - (e) Go, kiss the world- Subroto Bagachi
  - (f) Amaltanti : Nirendranath Chakrabarti
  - (g) Hitting Downy for a six- Kalpana Sharma
  - (h) Chocolate : Manju Kapur
  - (i) Ref Book :

*Fluency in English: Ed Promodini Verma, Mukti Sanyal, Tulika Prasad, New Delhi- Macmillan India, 2009 .*



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**ECONOMICS -I**

**Subject Code: BACSD1-116**

**L T P C  
4 0 0 4**

**Duration: 60 Hrs.**

| COs | Course Outcomes   | PO 1 | PO 2 | PO 3 | PO 4 | PO 5 | PO 6 |
|-----|---|------|------|------|------|------|------|
| CO1 | To provide students with an overview of the economics concepts, theories and models related to micro economics                              |      | 2    | 2    |      | 3    | 1    |
| CO2 | To understand the fundamental principles of supply and demand and how they determine market prices and quantities                           |      | 2    | 2    | 1    | 2    |      |
| CO3 | To study firm behavior, production theory, cost analysis and how firms make production and pricing decisions in different market structures |      | 2    | 2    |      | 3    | 1    |

**UNIT – I (15 Hrs.)**

Introduction: Definition, Meaning, Nature and scope of Economics.

Theory of Demand and Consumer Behaviour Utility Analysis & Indifference Curve Analysis, Law of Demand & Exceptions. Elasticity of Demand its Measurement consumer surplus & its measurement.

**UNIT – II (15 Hrs.)**

Theory of production and costs: Concept, law of variable proportions & Law of Return to scale. Cost concept.

Market forms and Revenue: Behaviour of Average Revenue and Marginal Revenue under perfect competition. Relationship Between Average Revenue, Marginal Revenue.

**UNIT – III (15 Hrs.)**

Price and Output Determination: Determination of the firm & industry under perfect competition, monopoly – In short and long seen.

**UNIT – IV (15 Hrs.)**

Distribution: Marginal productivity and modern theories of wage determination.

Theory of interest, risk and uncertainty theories of profit.

*Ref Books:*

(a) *Microeconomics – TR Jain ,Mukesh Trehan ,AS Sandhu*

(b) *Microeconomics- Chopra P.N , Theory & welfare economics ,Kalyani Publishers ,New Delhi.*

(c) *Microeconomics- Chopra P.N ,Singh Joginder & Grewal ,PS ( Punjabi Medium) Latest edition Price Theory & Distribution ,Kalyani Publishers ,Ludhiana.*

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**ਪੰਜਾਬੀ ਇਲੈਕਟਿਵ - I**

**Subject Code: BACSD1-117**

**L T P C  
4 0 0 4**

**Duration: 60 Hrs.**

| COs | Course Outcomes   | PO 1 | PO 2 | PO 3 | PO 4 | PO 5 | PO 6 |
|-----|---|------|------|------|------|------|------|
| CO1 | <b>Language Skills:</b> Enhance reading, writing, listening, and speaking skills in Punjabi   | 3    | 1    | 2    |      |      |      |
| CO2 | <b>Writing Skills:</b> Learn to write story in Punjabi  | 3    |      | 2    |      | 1    |      |
| CO3 | <b>Reading Comprehension:</b> Improve the ability to read and understand Punjabi text written by famous authors, poems by Punjabi poets | 2    |      | 1    | 2    |      |      |

**ਪਾਠਕ੍ਰਮ**

1. ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਕਵਿਤਾ ਦਾ ਅਧਿਐਨ
2. ਭਾਸ਼ਾ ਤੇ ਪੰਜਾਬੀ (ਭਾਸ਼ਾ)
3. ਸਾਹਿਤ ਦੇ ਰੂਪ

**ਯੂਨਿਟ – I (15Hrs)**

(ੳ) ‘ਨਕਸ਼ਨੁਹਾਰ’ ਪੁਸਤਕ ਵਿੱਚੋਂ ਪ੍ਰਸੰਗ ਸਹਿਤ ਵਿਆਖਿਆ।  
(ਅ) ਕਾਵਿ ਸੰਗ੍ਰਹਿ ਵਿੱਚੋਂ ਕਿਸੇ ਇਕ ਕਵਿਤਾ ਦਾ ਵਿਸ਼ਾ-ਵਸਤੂ।

**ਯੂਨਿਟ – II (15Hrs)**

ਭਾਸ਼ਾ ਅਤੇ ਪੰਜਾਬੀ ਭਾਸ਼ਾ : ਭਾਸ਼ਾ ਦੀ ਪਰਿਭਾਸ਼ਾ, ਮਹੱਤਵ

**ਯੂਨਿਟ – III (15Hrs)**

ਸਾਹਿਤ ਦੇ ਰੂਪ : ਕਵਿਤਾ , ਗੀਤ , ਗਜਲ।

**ਯੂਨਿਟ – IV (15Hrs)**

ਇਕਾਂਗੀ , ਕਹਾਣੀ (ਸਾਹਿਤ ਦੇ ਰੂਪ), ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦੀਆਂ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ।

• **ਕੋਰਸ**

‘ਨਕਸ਼ਨੁਹਾਰ’ (ਸੰਪਾਦਕ) ਡਾ. ਜਸਵਿੰਦਰ ਸਿੰਘ ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਕਵਿਤਾ (1901 ਈ. ਤੋਂ 2000 ਈ. ਤੱਕ)।  
ਸਹਾਇਕ ਪੁਸਤਕਾਂ: (ਨਿਰਧਾਰਿਤ ਕਵੀ: ਭਾਈ ਵੀਰ ਸਿੰਘ, ਪ੍ਰੋ. ਪੂਰਨ ਸਿੰਘ, ਧਨੀ ਰਾਮ ਚਤ੍ਰਕ, ਪ੍ਰੋ. ਮੋਹਨ ਸਿੰਘ, ਅੰਮ੍ਰਿਤਾ ਪ੍ਰੀਤਮ, ਬਾਵਾ ਬਲਵੰਤ, ਸ਼ਿਵ ਕੁਮਾਰ ਬਟਾਲਵੀ, ਡਾ. ਹਰਭਜਨ ਸਿੰਘ, ਡਾ. ਜਗਤਾਰ।)

1. ਬਰਾੜ, ਬੂਟਾ ਸਿੰਘ (ਡਾ.) ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਸ਼੍ਰੇਣੀ ਤੇ ਸਰੂਪ ਵਾਰਿਸ਼ ਸ਼ਾਹ ਫਉਡੇਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ 2012।
2. ਪੰਜਾਬੀ ਸਾਹਿਤ ਦਾ ਇਤਿਹਾਸ (ਆਧੁਨਿਕ ਕਾਲ) ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ ਪਟਿਆਲਾ।

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**SOCIOLOGY - I**

**Subject Code: BACSD1-118**

**L T P C  
4 0 0 4**

**Duration: 60 Hrs.**

| COs | Course Outcomes  | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 |
|-----|--|-----|-----|-----|-----|-----|-----|
| CO1 | Articulate a sociological perspective. Apply sociological theories to understand social phenomena. |     | 2   | 3   |     |     | 1   |
| CO2 | Critically evaluate explanations of human behavior and social phenomena                            |     | 2   | 2   | 1   |     | 1   |
| CO3 | Use sociological knowledge to inform policy debates and promote public understanding.              |     |     | 3   | 1   | 1   |     |

**UNIT- I (15 Hrs.)**

- Introduction to Sociology:- ਸਮਾਜ ਵਿਗਿਆਨ ਦੀ ਭੂਮਿਕਾ, ਸਮਾਜ ਵਿਗਿਆਨ ਦਾ ਜਨਮ ਤੇ ਵਿਕਾਸ
- ਸਮਾਜ ਵਿਗਿਆਨ ਦੀ ਪ੍ਰਕਿਰਤੀ, ਸਮਾਜ ਵਿਗਿਆਨ ਦੀ ਅਸਲ ਪ੍ਰਕਿਰਤੀ।

**UNIT- I (15 Hrs.)**

- ਮਨੁੱਖੀ ਸਮਾਜ, ਸਮਾਜ ਦਾ ਆਮ ਸਰੂਪ, ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ, ਵਿਅਕਤੀ ਅਤੇ ਸਮਾਜ
- ਸਮਾਜਿਕ ਸਮੂਹ

**UNIT- I (15 Hrs.)**

- ਸੰਸਕ੍ਰਿਤੀ, ਅਰਥ, ਪਰਿਭਾਸ਼ਾ, ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ, ਸੰਸਕ੍ਰਿਤੀ ਦੇ ਕਾਰਜ ਕਿਸਮਾਂ, ਸੰਸਕ੍ਰਿਤਕ ਪਛੜਾਪਨ, ਸੰਸਕ੍ਰਿਤੀ ਤੇ ਸੱਭਿਅਤਾ।

**UNIT- I (15 Hrs.)**

- ਸਮਾਜੀਕਰਣ:- ਅਰਥ, ਪਰਿਭਾਸ਼ਾ, ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ ਤੇ ਸਾਧਨ
- ਸਮਾਜਿਕ ਨਿਯੰਤਰਣ:- ਅਰਥ ਪਰਿਭਾਸ਼ਾ, ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ, ਲੋੜ, ਸਾਧਨ

**Recommended Books:**

1. ਸਮਾਜ ਵਿਗਿਆਨ ਨਾਲ ਜਾਣ-ਪਛਾਣ (ਡੋਕੀ ਐਂਜਲਾ)
2. ਸਮਾਜ ਸ਼ਾਸਤਰ ਦਾ ਪਾਠਕ (ਮਧੁਰਿਮਾ)
3. ਸਮਾਜਿਕ ਸੰਸਥਾਵਾਂ (ਡਾ. ਸੁਕੱਨਿਆ ਦਾਸ)
4. Bhushan Vidya & Sachdeva D.D (2014): An Introduction of Sociology Kilab Maal Allahabad

**MRSPTU B.A. (COMPUTER SCIENCE)  
SYLLABUS 2023 BATCH ONWARDS**

**ELECTIVE COMPUTER-I**

**Subject Code: BACSD1-119**

**L T P C**

**Duration: 60 Hrs**

**4 0 0 4**

| COs | Course Outcomes  | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 |
|-----|--|-----|-----|-----|-----|-----|-----|
| CO1 | Understand, analyze and create web pages using HTML              |     |     | 3   |     | 2   |     |
| CO2 | Understand, analyze and build interactive web applications       |     |     | 2   |     | 3   |     |
| CO3 | Students should be able to design and implement a basic website. | 1   |     | 3   |     | 3   |     |

**UNIT - I**

**Basic Terminology:** Introduction to web programming, Website, Webpage, Static Website, Dynamic Website, Internet, Intranet, Extranet, WWW, URL, client server architecture, internet domains.

**Introduction to HTML:** Basics of HTML5, difference between HTML & HTML5, Structure of an HTML program, understanding document tags.

**UNIT - II**

**HTML5 formatting:** Formatting tags e.g. font, Bold, italic, super script, subscript, delete, mark etc.

**Lists:** Unordered List, Ordered Lists, Definition lists.

**Adding Images:** Img element using Border, Width, Height, Align, ALT Attributes

**UNIT - III**

**Introduction to LINK:** anchor element, internal linking and external linking, attribute of anchor tag.

**Tables:** Caption Tag, Width, Border, Cell padding, Cell spacing, BGCOLOR, COLSPAN and ROWSPAN Attribute

**UNIT - IV**

**HTML Frames:** Introduction to frameset tag, frame tag, iframes and respective attributes.

**Forms:** Attributes of Form element, Input element: Text Element, Password, Button, SubmitButton, Reset Button, The Checkbox, Radio, Text Area, Select and Option.

*\*Faculty members can take practical sessions during the lectures.*

**Recommended Books:**

1. Kogent Learning Solutions Inc., "HTML 5 in simple steps", Dreamtech Press.
2. Murray, Tom/Lynchburg, "Creating a Web Page and Web Site", 2002.
3. Steven M. Schafer, "HTML, XHTML, and CSS Bible, 5ed", Wiley India.

# **SEMESTER - II**

**MRSPTU B.A. (COMPUTER SCIENCE)  
SYLLABUS 2023 BATCH ONWARDS**

**GENERAL PUNJABI - II**

**Subject Code: BACSS1-202**

**L T P C  
4 0 0 4**

**Duration: 60 Hrs.**

| COs | Course Outcomes   | PO 1 | PO 2 | PO 3 | PO 4 | PO 5 | PO 6 |
|-----|---|------|------|------|------|------|------|
| CO1 | <b>Language Skills:</b> Enhance reading, writing, listening, and speaking skills in Punjabi         | 3    | 1    | 2    |      |      |      |
| CO2 | <b>Vocabulary and Grammar:</b> Learn essential Punjabi vocabulary and grammar rules                 | 3    |      | 2    |      |      |      |
| CO3 | <b>Writing Skills:</b> Learn to write Notices   | 3    |      | 2    |      | 1    |      |
| CO4 | <b>Reading Comprehension:</b> Improve the ability to read, understand and summarize Punjabi stories | 2    |      | 1    | 2    |      |      |

**ਪਾਠਕ੍ਰਮ**

1. ਪੰਜਾਬੀ ਕਹਾਣੀਆ ਦਾ ਅਧਿਐਨ
2. ਮੁਹਾਵਰੇ
3. ਸੂਚਨਾ ਹਿੱਤ ਨੋਟਿਸ

**ਯੂਨਿਟ – I (15 Hrs)**

ਕਥਾ ਕਹਾਣੀ ਪੁਸਤਕ ਵਿੱਚੋਂ ਕਿਸੇ ਇੱਕ ਕਹਾਣੀ ਦਾ ਵਿਸ਼ਾ ਦੱਸ ਕੇ ਸਾਰ ਲਿਖਣਾ।

**ਯੂਨਿਟ – II (15 Hrs)**

ਕਹਾਣੀ ਸੰਗ੍ਰਹਿ ਵਿੱਚੋਂ ਸੰਖੇਪ ਉੱਤਰਾਂ ਵਾਲੇ ਪ੍ਰਸ਼ਨ।

**ਯੂਨਿਟ – III (15 Hrs)**

ਮੁਹਾਵਰੇ : ਅਰਥ ਦਸ ਕੇ ਵਾਕ ਬਣਾਉਣੇ।

**ਯੂਨਿਟ – IV (15 Hrs)**

ਸੂਚਨਾ ਹਿੱਤ ਨੋਟਿਸ (ਸਾਹਿਤਕ, ਸੱਭਿਆਚਾਰਕ ਤੇ ਖੇਡ ਖੇਤਰ ਨਾਲ ਸੰਬੰਧਿਤ)

• **ਕੋਰਸ**

ਕਥਾ ਕਹਾਣੀ ਪੁਸਤਕ (ਸੰਪਾਦਕ) ਡਾ. ਧਨਵੰਤ ਕੌਰ, ਪਬਲੀਕੇਸ਼ਨ ਬਿਊਰੋ।

ਸਹਾਇਕ ਪੁਸਤਕਾਂ .1 : ਅਗਨੀ ਹੇਤਰੀ, ਵੇਦ, ਪਰਿਚਾਇਕ, ਭਾਸ਼ਾ ਵਿਗਿਆਨ, ਦੀ ਪਕਪਬਲਿਕੇਸ਼ਨ ਜਲੰਧਰ 1981

।

2. ਜੱਸਲ ਕੰਵਲਜੀਤ, ਪੰਜਾਬੀ ਵਿਆਕਰਨ ਦੇ ਕੁੱਝ ਪੱਖ, ਰਵੀ ਸਾਹਿਤ ਪ੍ਰਕਾਸ਼ਨਹਾਲ, ਬਾਜ਼ਾਰ ਅਮ੍ਰਿਤਸਰ 2012।

**MRSPTU B.A. (COMPUTER SCIENCE)  
SYLLABUS 2023 BATCH ONWARDS**

**GENERAL ENGLISH - II**

**Subject Code: BACSS1-201**

**L T P C  
4 0 0 4**

**Duration: 60 Hrs.**

| COs | Course Outcomes   | PO 1 | PO 2 | PO 3 | PO 4 | PO 5 | PO 6 |
|-----|---|------|------|------|------|------|------|
| CO1 | <b>Language Proficiency:</b> Develop proficiency in the English Language                          | 3    | 2    | 2    |      | 1    |      |
| CO2 | <b>Vocabulary and Grammar:</b> Learn essential English vocabulary and grammar rules               | 3    |      | 2    |      |      |      |
| CO3 | <b>Writing Skills:</b> Learn and practice letter writing and unseen passage                       | 3    |      | 2    |      | 1    |      |
| CO4 | <b>Reading Comprehension:</b> Improve the ability to read and understand English Poetry and Prose | 2    |      | 1    | 2    |      |      |

**UNIT -1 (Poetry) (15 Hrs.)**

- i.) I know why the caged bird sings - Maya Angelou.
- ii.) From homecoming – R.Parthasarathy.
- iii.) Where the mind is without fear - Rabindranath tagore.
- iv.) Goodbye party for Miss Pushpa T.S - Nissim Ezekiel.

**UNIT -2 (Prose) (15 Hrs.)**

- i.) Principles of good writing - L.A. Hill.
- ii.) The doctor's word – R.K. Narayan.
- iii.) The eyes are not here - Ruskin bond.
- iv.) The conjurer's revenge - Stephen leacock.

**UNIT-3 (15 Hrs.)**

- i.) Letter writing (Personal only).
- ii.) Comprehension of unseen Passage.

**UNIT- 4 (15 Hrs.)**

- i.) Grammar → Narration, Preposition, conjunction, synonyms.
- ii.) Translation from Hindi to English (four out of six sentences) Idiom Based.

**Textbook:-**

1. The poetic palate (orient blackswan, for-1/2Sem Second edition, 2016)
2. Prose parables (orient black swan,2013)
3. English at work (selection from poetry & prose Vijay kumar, B.T. Seetha, A.V Suresh Kumar, Y.L. Srinivas, New Delhi; Macmillan, India Ltd.2012 (Punjab University) revised edition.

**MRSPTU B.A. (COMPUTER SCIENCE)  
SYLLABUS 2023 BATCH ONWARDS**

**TRENDS IN IT AND OFFICE AUTOMATION**

**Subject Code: BACSS1-203**

**L T P C  
4 0 0 4**

**Duration: 60 Hrs.**

| COs | Course Outcomes  | PO 1 | PO 2 | PO 3 | PO 4 | PO 5 | PO 6 |
|-----|--|------|------|------|------|------|------|
| CO1 | <b>IT Trends:</b> Introduce students to recent trends of information technology like mobile internet, 4G, cloud technology and social media trends |      |      | 3    |      | 2    |      |
| CO2 | <b>Office Automation Tools:</b> Familiarize students with word processing software, editing and formatting text                                    |      |      | 2    |      | 3    |      |
| CO3 | <b>Networking and Software:</b> Introduce the students to soft computing, software process models and IOT  | 1    |      | 3    |      | 3    |      |

**UNIT-I (15 Hrs.)**

- Trends in IT:** Mobile Internet, GPS, 3G, 4G, Wi-Fi, Bluetooth, Cloud Technology, Virtual LAN Technology, Firewall, Nanotechnology, online shopping, Social media, You tube, Face book, Twitter, Goggle+ .

IT ਵਿੱਚ ਰੁਝਾਨ: ਮੋਬਾਈਲ ਇੰਟਰਨੈੱਟ, GPS, 3G, 4G, Wi-Fi, ਬਲੂਟੂਥ, ਕਲਾਉਡ ਟੈਕਨਾਲੋਜੀ, ਵਰਚੁਅਲ LAN ਤਕਨਾਲੋਜੀ, ਫਾਇਰਵਾਲ, ਨੈਨੋ ਤਕਨਾਲੋਜੀ, ਔਨਲਾਈਨ ਖਰੀਦਦਾਰੀ, ਸੋਸ਼ਲ ਮੀਡੀਆ, ਯੂਟਿਊਬ, ਫੇਸਬੁੱਕ, ਟਵਿੱਟਰ, ਗੋਗਲ+।

**UNIT-II (15 Hrs.)**

- E-mail:-**Introduction, Advantages and disadvantages, Structure of an Email message, working of Email(Sending and receiving message, managing E-mail(creating new folder, deleting messages, forwarding messages, filtering messages), Telnet, HTTP, TCP/IP, HTML, DHTML.

- Mail merge:** Creating merged envelopes, creating merged mailing labels

ਈ-ਮੇਲ:-ਜਾਣ-ਪਛਾਣ, ਫਾਇਦੇ ਅਤੇ ਨੁਕਸਾਨ, ਈਮੇਲ ਸੰਦੇਸ਼ ਦੀ ਬਣਤਰ, ਈਮੇਲ ਦਾ ਕੰਮ (ਸੁਨੇਹੇ ਭੇਜਣਾ ਅਤੇ ਪ੍ਰਾਪਤ ਕਰਨਾ, ਈ-ਮੇਲ ਦਾ ਪ੍ਰਬੰਧਨ ਕਰਨਾ (ਨਵਾਂ ਫੋਲਡਰ ਬਣਾਉਣਾ, ਸੰਦੇਸ਼ਾਂ ਨੂੰ ਮਿਟਾਉਣਾ, ਸੰਦੇਸ਼ਾਂ ਨੂੰ ਅੱਗੇ ਭੇਜਣਾ, ਸੁਨੇਹਿਆਂ ਨੂੰ ਫਿਲਟਰ ਕਰਨਾ), ਟੇਲਨੈੱਟ, HTTP, TCP /IP, HTML, DHTML।

ਮੇਲਮਰਜ਼: ਵਿਲੀਨ ਲਿਫਾਫੇ ਬਣਾਉਣਾ, ਵਿਲੀਨਮੇਲਿੰਗ ਲੇਬਲ ਬਣਾਉਣਾ।

**UNIT – III (15 Hrs.)**

- Word Processing Software:** Basics of Word Processing: creating, opening, saving, and printing document, Menu Toolbars.

- Editing Text:** Copy, Paste, Delete, Move etc., Finding and Replacing Text, Spell Check, Autocorrect feature, language setting and thesaurus

- Formatting:** Character, Paragraph and Page formatting, working with indents, Bulleted and numbered lists, adding Headers and Footers, setting up Multiple Columns



ਵਰਡ ਪ੍ਰੋਸੈਸਿੰਗ ਸੌਫਟਵੇਅਰ: ਵਰਡ ਪ੍ਰੋਸੈਸਿੰਗ ਦੀਆਂ ਮੂਲ ਗੱਲਾਂ: ਦਸਤਾਵੇਜ਼ ਬਣਾਉਣਾ, ਖੋਲ੍ਹਣਾ, ਸੇਵ ਕਰਨਾ ਅਤੇ ਪ੍ਰਿੰਟਿੰਗ ਕਰਨਾ, ਮੀਨੂ ਟੂਲਬਾਰ।

ਟੈਕਸਟ ਨੂੰ ਸੰਪਾਦਿਤ ਕਰਨਾ: ਕਾਪੀ ਕਰੋ, ਪੇਸਟ ਕਰੋ, ਮਿਟਾਓ, ਮੁਵ ਕਰੋ ਆਦਿ, ਟੈਕਸਟ ਲੱਭਣਾ ਅਤੇ ਬਦਲਣਾ, ਸਪੈਲਚੈੱਕ, ਸਵੈ-ਸੁਧਾਰ ਵਿਸ਼ੇਸ਼ਤਾ, ਭਾਸ਼ਾ ਸੈਟਿੰਗ ਅਤੇ ਥੀਸੌਰਸ

ਫਾਰਮੈਟਿੰਗ: ਅੱਖਰ, ਪੈਰਾਗ੍ਰਾਫ ਅਤੇ ਪੰਨਾ ਫਾਰਮੈਟਿੰਗ, ਇੰਡੈਂਟਸ ਦੇ ਨਾਲ ਕੰਮ ਕਰਨਾ, ਬੁਲੇਟਡ ਅਤੇ ਨੰਬਰ ਵਾਲੀਆਂ ਸੂਚੀਆਂ, ਸਿਰਲੇਖ ਅਤੇ ਫੁੱਟਰ ਜੋੜਨਾ, ਕਈ ਕਾਲਮ ਸਥਾਪਤ ਕਰਨਾ।

**UNIT-IV (15 Hrs.)**

7. **Soft Computing:**-Introduction to Neural Network-intelligence, Neurons, artificial neural networks, application scope of neural network, brain Vs computer.
8. **Software Process Models:** Software Development Life Cycle, Waterfall Life Cycle Model, Prototype Model, Spiral Model, Introduction to Agile Models.
9. **IOT architecture:** - Topologies, edge routers, client-server architecture, P2P, M2M.

ਸਾਫਟ ਕੰਪਿਊਟਿੰਗ:- ਨਿਊਰਲ ਨੈੱਟਵਰਕ-ਇੰਟੈਲੀਜੈਂਸ, ਨਿਊਰੋਨਸ, ਆਰਟੀਫਿਸ਼ੀਅਲ ਨਿਊਰਲ ਨੈੱਟਵਰਕ, ਨਿਊਰਲ ਨੈੱਟਵਰਕ ਦਾ ਐਪਲੀਕੇਸ਼ਨ ਸਕੋਪ, ਦਿਮਾਗ ਬਨਾਮ ਕੰਪਿਊਟਰ ਦੀ ਜਾਣ-ਪਛਾਣ।

ਸਾਫਟਵੇਅਰ ਪ੍ਰੋਸੈਸ ਮਾਡਲ: ਸਾਫਟਵੇਅਰ ਡਿਵੈਲਪਮੈਂਟ ਲਾਈਫ ਸਾਈਕਲ, ਵਾਟਰ ਫਾਲਲਾਈ ਫਸਾਈਕਲ ਮਾਡਲ, ਪ੍ਰੋਟੋ ਟਾਈਪ ਮਾਡਲ, ਸਪਾਈਰਲ ਮਾਡਲ, ਐਗਾਇਲ ਮਾਡਲਾਂ ਦੀ ਜਾਣ-ਪਛਾਣ।

IOT ਆਰਕੀਟੈਕਚਰ: - ਟੋਪੋਲੋਜੀਜ਼, ਐਜਰਾਊਟਰ, ਕਲਾਇੰਟ-ਸਰਵਰਆਰਕੀਟੈਕਚਰ, P2P, M2M

**Recommended Books:**

1. Peter Nortorn's, 'Introduction to Computer', Tata McGraw Hill, 2004.
2. R.K. Taxali, 'Introduction to Software Package', Galgotia Publications.
3. P.K. Sinha, 'Introduction to Computer

**MRSPTU B.A. (COMPUTER SCIENCE)  
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**TRENDS IN IT AND OFFICE AUTOMATION (LAB)**

**Subject Code: BACSS1-204**

**L T P C  
0 0 4 2**

**Duration: 30 Hrs.**

| COs | Course Outcomes  | PO 1 | PO 2 | PO 3 | PO 4 | PO 5 | PO 6 |
|-----|--|------|------|------|------|------|------|
| CO1 | <b>IT Trends:</b> Introduce students to recent trends of information technology like mobile internet, 4G, cloud technology and social media trends |      |      | 3    |      | 2    |      |
| CO2 | <b>Office Automation Tools:</b> Familiarize students with word processing software, editing and formatting text                                    |      |      | 2    |      | 3    |      |
| CO3 | <b>Networking and Software:</b> Introduce the students to soft computing, software process models and IOT  | 1    |      | 3    |      | 3    |      |

This laboratory course will comprise as exercises to supplement what is learnt under paper BACSS1-203

Introduction to Trends in IT and OFFICE Automation. The students will do the following sequence of practicals:

1. Familiarizing with PC and WINDOWS commands,
2. File creation,
3. Editing
4. Directory creation.
5. Mastery of DOS internal & external commands.
6. Learning to use MS Office: MS WORD, MS EXCEL & MS PowerPoint

**MRSPTU B.A. (COMPUTER SCIENCE)  
SYLLABUS 2023 BATCH ONWARDS**

**HISTORY - II**

**Subject Code: BACSD1-211**

**L T P C  
4 0 0 4**

**Duration: 60 Hrs.**

| COs | Course Outcomes  | PO 1 | PO 2 | PO 3 | PO 4 | PO 5 | PO 6 |
|-----|--|------|------|------|------|------|------|
| CO1 | <b>Historical Timeline:</b> To provide students with a chronological overview of Sikh history  |      | 2    | 3    |      | 1    |      |
| CO2 | <b>Guru Tradition:</b> To explore the lives and teachings of Sikh Gurus and their contribution to shaping Sikhism's Principles and practices   |      |      | 2    | 3    | 2    | 1    |
| CO3 | <b>Key Events and Turning Points:</b> To identify and analyze significant events and turning points in Sikh History, such as the establishment of the Khalsa, Sikh rulers, British rule and Freedom struggle |      |      |      | 1    | 1    | 1    |

**UNIT – I (15 Hrs.)**

Shri Guru Nanak Dev Ji, Expansion and consolidation of Sikhism, Shri Guru Arjun Dev Ji  
ਸ਼੍ਰੀ ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਜੀ, ਸਿੱਖ ਧਰਮ ਦਾ ਵਿਕਾਸ, ਸ਼੍ਰੀ ਗੁਰੂ ਅਰਜਨ ਦੇਵ ਜੀ

**UNIT – II (15 Hrs.)**

Development of Sikhism, Creation of The Khasla, Banda Singh Bahadur  
ਸਿੱਖ ਧਰਮ ਦਾ ਵਿਕਾਸ, ਖਾਲਸਾ ਦੀ ਸਿਰਜਨਾ, ਬੰਦਾ ਸਿੰਘ ਬਹਾਦਰ

**UNIT – III (15 Hrs.)**

Punjab Under Maharaja Ranjit Singh, British Rule, Socio-Religious reform Movements  
ਮਾਹਾਰਾਜਾ ਰਣਜੀਤ ਸਿੰਘ ਦੇ ਅਧੀਨ ਪੰਜਾਬ, ਅੰਗਰੇਜ਼ੀ ਰਾਜ ਸਮਾਜਿਕ ਅਤੇ ਧਾਰਮਿਕ ਸੁਧਾਰ ਅੰਦੋਲਨ

**UNIT – IV (15 Hrs.)**

Phase of the Freedom Struggle, Development after Independence  
ਸਵਤੰਤਰਤਾ ਸੰਗਰਾਮ ਦੀ ਅਵਸਥਾ, ਸਵਤੰਤਰਤਾ ਬਾਅਦ ਦਾ ਵਿਕਾਸ।

**Books: -**

History of Punjab M.S. Mann (1469-1966)

**MRSPTU B.A. (COMPUTER SCIENCE)  
SYLLABUS 2023 BATCH ONWARDS**

**POLITICAL SCIENCE - II**

**Subject Code: BACSD1-212**

**L T P C  
4 0 0 4**

**Duration: 60 Hrs.**

| COs | Course Outcomes   | PO 1 | PO 2 | PO 3 | PO 4 | PO 5 | PO 6 |
|-----|---|------|------|------|------|------|------|
| CO1 | <b>Introduction:</b> Familiarize students with the discipline of political science, theories of power and authority |      | 2    | 3    |      |      | 1    |
| CO2 | <b>Rights and Duties:</b> Awareness about rights and duties   |      | 2    | 2    | 1    |      | 1    |
| CO3 | <b>Political Concepts:</b> Study about concept of liberty, equality, legitimacy                                     |      |      | 3    | 1    | 1    |      |

**UNIT – I (15 Hrs.)**

- Concept of Power: Meaning and Definition of Power, Characteristic of Power, Sources of Power. Different forms of Power Criticism the concept of Power.
- Concept of Authority - Meaning and Definitions of Authority, Characteristics of Authority kinds of Authority and Its Basis.

**UNIT – II (15 Hrs.)**

- Concept of legitimacy: Meaning and its legitimacy, Characteristics of legitimacy kinds of legitimacy, Crisis of legitimacy. Importance of legitimacy.
- Political Culture:- Meaning and Definitions of Political, Characteristics of Political Culture components of Political Culture, kinds of Political culture.

**UNIT – III (15 Hrs.)**

- Political Specialisation - Meaning and Its Definition, Characteristic of Political Socialisation Types of political Socialisation , Agents of Political specialisation, and Its Importance.
- Rights and Duties - Meaning and Definitions of Rights, Nature the characteristics of Rights, Classification of Rights, duties & Classification. Relationship between Rights and Duties.

**UNIT – IV (15 Hrs.)**

- Liberty: - Meaning and Definition of Liberty and its Characteristics Different forms or kind of liberty, main supporters of this theory.
- Concept of Equality: Meaning and its - Definitions characteristics of Equality. Various dimensions of Equality. Relationship Between Liberty and Equality.

**Recommended Books:**

1. Political Theory – J.S. Badyal, Raj Publications
2. Comparative Political System and International Politics – J.S. Badyal

**MRSPTU B.A. (COMPUTER SCIENCE)  
SYLLABUS 2023 BATCH ONWARDS**

**MATHEMATICS (ALGEBRA) - II**

**Subject Code: BACSD1-213**

**L T P C  
4 0 0 4**

**Duration: 60 Hrs.**

| COs | Course Outcomes   | PO 1 | PO 2 | PO 3 | PO 4 | PO 5 | PO 6 |
|-----|---|------|------|------|------|------|------|
| CO1 | <b>Basic Operations:</b> To understand and apply the fundamental operations in algebra  |      |      | 3    |      | 2    |      |
| CO2 | <b>Solving Equations:</b> To learn how to solve linear and quadric equations            |      | 1    | 2    |      | 3    |      |
| CO3 | <b>Systems of Equations:</b> To solve systems of linear equations using various methods |      |      | 2    |      | 2    |      |

**UNIT-I (15 Hrs.)**

Matrices, Row and Column Space of Matrix, Row reduction and echelon forms, Rank, Systems of linear equations, Gaussian elimination, Determinants and their properties, Cramer's rule, Vector equations, The matrix equation  $AX = B$ , Solution sets of linear systems (Homogeneous & Non-homogeneous), Applications of linear systems.

**UNIT -II (15 Hrs.)**

Eigen values, Eigenvectors, Characteristic polynomial, Minimal polynomial, Characteristic equation of a matrix, Cayley-Hamilton theorem and its use in finding the inverse of a matrix, Diagonalization, Linear transformations, Representation of linear transformations by matrices, Change of basis, Rank-nullity theorem, Minimal polynomial.

**UNIT-III (15 Hrs.)**

Binary space, Definition of group, Ring and field, Vector space, Subspace, Linear combination, linear span, Dimension of vector space, direct sum of spaces, Quotient space, Homomorphism & Isomorphism of vector space.

**UNIT-IV (15 Hrs.)**

Linear Transformation, Null space, Range space, Product of linear transformation, Singular and nonsingular transformation, Canonical forms, Jordan forms, Triangular forms, Rank-nullity theorem, Eigen value & Eigen vectors of linear transformation

**Recommended Books:**

1. Trigonometry & matrices – Precise Publication
2. Group theory – Precise Publication
3. linear transformation – Precise Publication

**MRSPTU B.A. (COMPUTER SCIENCE)  
SYLLABUS 2023 BATCH ONWARDS**

**PHYSICAL EDUCATION - II**

**Subject Code: BACSD1-214**

**L T P C  
4 0 0 4**

**Duration: 60 Hrs.**

| COs | Course Outcomes   | PO 1 | PO 2 | PO 3 | PO 4 | PO 5 | PO 6 |
|-----|---|------|------|------|------|------|------|
| CO1 | <b>Physical Fitness:</b> Improve the understanding of Physical Fitness concepts and practice  |      |      | 2    |      | 3    | 1    |
| CO2 | <b>Motor Skills Development:</b> Enhance the students' motor skills like running, jumping, throwing, catching, kicking and other fundamental movement |      |      | 2    |      | 2    |      |
| CO3 | <b>Teamwork and Cooperation:</b> Promote teamwork, cooperation, and sportsmanship through various sports and group activities                         | 1    |      | 2    |      | 1    | 1    |
| CO4 | <b>Health Awareness:</b> Raise awareness about the importance of regular physical activity for maintaining overall health                             |      |      | 1    |      | 3    |      |
| CO5 | <b>Physical Education and Lifelong Activity:</b> Foster an understanding of the importance of lifelong  |      | 1    |      |      | 1    | 1    |

**(THEORY – 60)**

**UNIT – I (15 Hrs.)**

- **Children and Sports:** Introduction, Stages of Motor Development in Children, Benefits of Exercise for Children, Weight Training and their Advantages or Disadvantages for Children.
- **Body Types:** Introduction, Sheldon and Kretschmer's Classification.
- **Communicable Diseases :** Introduction, Classification, Causes, Symptoms, Prevention and Control of Communicable Disease (Cholera, Typhoid, Tuberculosis, AIDS, Hepatitis A & B, Rabies and Malaria)

**UNIT – II (15 Hrs.)**

- **Sports Terminologies:** Isometric, Isotonic, Isokinetic, Reflex Action, Over Load, Recovery and Motor Ability.
- **Skeleton System:** Introduction, Types, Functions and various Bones of Body.
- **Joints :** Introduction, Classification of various Joints of Human Body and Kinds of Joint Movements

**UNIT – III (15 Hrs.)**

- **Description of the following:**
  - (a) N.S.N.I.S. (Netaji Subhash National Institute of Sports)
  - (b) S.A.I (Sports Authority of India)
  - (c) I.O.A. (Indian Olympic Association)
  - (d) I.A.A.F. (International Association of Athletic Federation)
- **Drugs:** Introduction, Causes, Symptoms, Harmful Effects and its Prevention.  
**Doping:** Introduction, Types, Prohibited Substances & Methods and its Effects.
- **Warming up and Cooling Down :** Introduction, Method type of Warm Up, Significance and Guidelines.

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**UNIT – IV(15 Hrs.)**

- **Long Jump** : Introduction, Rules, Layout, Techniques and Arjuna Awardees.
- **Hockey & Basketball**: History, Layout, General Rules and Regulations, Officials, Major tournaments and Arjuna Awardees.
- **Sports Awards**:
  - (a) Maharaja Ranjit Singh
  - (b) Arjuna Award
  - (c) Dronacharya Award
  - (d) MAKA Trophy
  - (e) Rajiv Gandhi Khel Ratan Award

**PRACTICAL (40 MARKS)**

**BASKETBALL, HOCKEY AND LONG JUMP**

Evaluation will be based on skill test, Performance, Practical file and Viva Voce.

\*\*\*\*\*END\*\*\*\*\*

References:

- (a) *Dr. Nishan Singh Deol (1980)* : *Text book of Physical Education & Sports. ( AP Publishers, Jalandhar).*
- (b) *Singh Ajmer et al (2000)* : *Modern Text Book of Physical Education, Health and Sports”, Kalyani Publishers, Ludhiana*

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**ELECTIVE ENGLISH - II**

**Subject Code: BACSD1-215**

**L T P C  
4 0 0 4**

**Duration: 60 Hrs.**

| COs | Course Outcomes  | PO 1 | PO 2 | PO 3 | PO 4 | PO 5 | PO 6 |
|-----|--|------|------|------|------|------|------|
| CO1 | <b>Improving Language Proficiency:</b> Enhance overall language skills, including speaking, listening, reading, and writing, to communicate effectively in English |      |      | 2    |      | 3    | 1    |
| CO2 | <b>Grammar and Vocabulary:</b> Develop a solid understanding of English grammar rules  |      |      | 2    |      | 2    |      |
| CO3 | <b>Writing Skills:</b> Develop the ability paragraph writing   | 1    |      | 2    |      | 1    | 1    |

**UNIT – I (15 Hrs.)**

- literary Terms : Prose, Essay, Expository Essay, Analytical essay, Lyrical essay, Descriptive Essay, Imaginative Essay, Philosophical Essay, short Story, Long story, Drama Dramatic plot, Character, Incident, setting, Structure Tragedy, Comedy, Tragi - comedy.

**UNIT – II (15 Hrs.)**

- Paragraph writing. (based on outline, a situation a string of questions etc).
- Applied Grammar
  - (a) Corrections.
  - (b) Use of the same words as different Parts of speech.

**UNIT – III (15 Hrs.)**

- Translation from vernacular into English
- Antonyms / Synonyms

**UNIT – IV (15 Hrs.)**

A Collection of essays, short stories & one acts plays: Ed RK Kaushik & SC Bhatia ,New Delhi ,OUP ,2006

**Recommended Books:**

1. A Collection of essays, short stories & one act plays, Ed R.K Kawhik & SC Bhatia New Delhi, oup,2006
2. Super Grammar & Composition for B.A Part – I
3. A Glossary and literary Terms –The Oxford M.H. Abrams
4. Dictionary of literary Teams.



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**ECONOMICS - II**

**Subject Code: BACSD1-216**

**L T P C  
4 0 0 4**

**Duration: 60 Hrs.**

| COs | Course Outcomes  | PO 1 | PO 2 | PO 3 | PO 4 | PO 5 | PO 6 |
|-----|--|------|------|------|------|------|------|
| CO1 | To provide students with an overview of the economics concepts, theories and models related to macro economics |      | 2    | 2    |      | 3    | 1    |
| CO2 | To understand the fundamental principles of Money and Banking; income and employment                           |      | 2    | 2    | 1    | 2    |      |
| CO3 | To study inflation, theories of inflation, policies for stabilization of inflation                             |      | 2    | 2    |      | 3    | 1    |

**UNIT – I (15 Hrs.)**

Introduction: Nature, Meaning and Scope of Macro Economics.

Consumption Function: Average and Marginal Propensity to consume.

Investment Function: Types of Investment, Investment Demand Schedule and factors affecting investment decisions.

**UNIT – II (15 Hrs.)**

Determination of income & employment: Classical & Keynesian theories of income output & employment, says's law of market.

**UNIT – III (15 Hrs.)**

Money – Definition, function, role Quantity theory of money – fishers's equation Keynesian liquidity preference theory

Banking: Major function & meaning of commerce banks.

**UNIT – IV (15 Hrs.)**

Inflation and macro economics polices: Cost push and demand pull theories of inflation.

Monetary & fiscal policies for stabilization.

***Reference Books:***

(a) *Macro Economics : Sharma ,OP (Punjabi Medium)*

(b) *Macro Economics – TR Jain, Ashok Gupta.*

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**ਪੰਜਾਬੀ ਇਲੈਕਟਿਵ - II**

Subject Code: BACSD1-217

L T P C  
4 0 0 4

Duration: 60 Hrs.

| COs | Course Outcomes   | PO 1 | PO 2 | PO 3 | PO 4 | PO 5 | PO 6 |
|-----|---|------|------|------|------|------|------|
| CO1 | <b>Language Skills:</b> Enhance reading, writing, listening, and speaking skills in Punjabi   | 3    | 1    | 2    |      |      |      |
| CO2 | <b>Writing Skills:</b> Learn to write story in Punjabi  | 3    |      | 2    |      | 1    |      |
| CO3 | <b>Reading Comprehension:</b> Improve the ability to read and understand Punjabi text written by famous authors, poems by Punjabi poets | 2    |      | 1    | 2    |      |      |

**ਪਾਠਕ੍ਰਮ**

1. ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਕਵਿਤਾ ਦਾ ਅਧਿਐਨ
2. ਭਾਰਤੀਕਾ ਵਿਸ਼ਾਸ਼ਤਰ
3. ਸਾਹਿਤ ਆਲੋਚਨਾ

**ਯੂਨਿਟ – I (Hrs)**

ਓ (ਨਕਸ਼ਾ-ਨੁਹਾਰ) ਕਾਵਿ ਪੁਸਤਕ ਵਿੱਚੋਂ ਪ੍ਰਸੰਗ ਸਹਿਤ ਵਿਆਖਿਆ।  
ਅ (ਕਾਵਿ ਸੰਗ੍ਰਹਿ) ਵਿੱਚੋਂ ਕਿਸੇ ਇਕ ਕਵਿਤਾ ਦਾ ਵਿਸ਼ਾ-ਵਸਤੂ।

**ਯੂਨਿਟ – II (Hrs)**

ਪੁਨੀ ਸੰਪਰਦਾਇ।

**ਯੂਨਿਟ – III (Hrs)**

ਅਲੰਕਾਰ ਸੰਪਰਦਾਇ ਮੁੱਢਲੀ ਜਾਣ ਪਛਾਣ।

**ਯੂਨਿਟ – IV (Hrs)**

ਸਾਹਿਤ ਆਲੋਚਨਾ : ਸਾਹਿਤ ਦੀ ਪ੍ਰੀਭਾਸ਼ਾ, ਪ੍ਰਕ੍ਰਿਤੀ ਅਤੇ ਤੱਤ।

• **ਕੋਰਸ**

‘ਨਕਸ਼ਾ ਨੁਹਾਰ’ (ਸੰਪਾਦਕ) ਡਾ. ਜਸਵਿੰਦਰ ਸਿੰਘ ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਕਵਿਤਾ (1901 ਈ. ਤੋਂ 2000 ਈ. ਤੱਕ) ਪਬਲੀਕੇਸ਼ਨ ਬਿਊਰੋ।

ਸਹਾਇਕ ਪੁਸਤਕਾਂ: (ਨਿਰਧਾਰਿਤ ਕਵੀ: ਪਾਸ਼, ਸੰਤ ਰਾਮ ਉਦਾਸੀ, ਸੁਰਜੀਤ ਪਾਤਰ, ਜਸਵੰਤ ਦੀਦ, ਨਵਤੇਜ ਭਾਰਤੀ, ਸੁਖਵਿੰਦਰ ਅਮਿੰਤ, ਦਰਸ਼ਨ ਬੁਲੰਦਵੀ, ਜਸਵਿੰਦਰ, ਸੁਖਪਾਲ)।

1. ਜੱਗੀ, ਰਤਨ ਸਿੰਘ (ਡਾ.) ਸਾਹਿਤ ਦੇ ਰੂਪ ਪਬਲੀਕੇਸ਼ਨ ਬਿਊਰੋ, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ ਪਟਿਆਲਾ।
2. ਪਾਜਾਬੀ ਸਾਹਿਤ ਦਾ ਇਤਿਹਾਸ (ਆਧੁਨਿਕਕਾਲ) ਭਾਸ਼ਾ ਵਿਭਾਗ, ਪਟਿਆਲਾ।

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**SOCIOLOGY –II**

**Subject Code: BACSD1-218**

**L T P C  
4 0 0 4**

**Duration: 60 Hrs.**

| COs | Course Outcomes  | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 |
|-----|--|-----|-----|-----|-----|-----|-----|
| CO1 | Articulate a sociological perspective. Apply sociological theories to understand social phenomena. |     | 2   | 3   |     |     | 1   |
| CO2 | Critically evaluate explanations of human behavior and social phenomena.                           |     | 2   | 2   | 1   |     | 1   |
| CO3 | Use sociological knowledge to inform policy debates and promote public understanding.              |     |     | 3   | 1   | 1   |     |

**ਯੂਨਿਟ - I (15 Hrs.)**

- ਸਮਾਜਿਕ ਸਤਰੀਕਰਣ : ਅਰਥ, ਪਰਿਭਾਸ਼ਾ, ਕਾਰਜ, ਆਧਾਰ
- ਸਮਾਜਿਕ ਅਸਮਾਨਤਾਵਾਂ : ਅਰਥ, ਪਰਿਭਾਸ਼ਾ, ਆਧਾਰ

**ਯੂਨਿਟ - II (15 Hrs.)**

- ਕਾਰਲ ਮਾਰਕਸ : ਸੰਘਰਸ਼ ਦਾ ਸਿਧਾਂਤ
- ਮੈਕਸ ਵੈਬਰ : ਬਹੁ ਆਯਾਮੀ ਸਿਧਾਂਤ

**ਯੂਨਿਟ - III (15 Hrs.)**

- ਜਾਤ : ਅਰਥ, ਪਰਿਭਾਸ਼ਾ, ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ
- ਜਮਾਤ : ਅਰਥ, ਪਰਿਭਾਸ਼ਾ, ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ

**ਯੂਨਿਟ - IV (15 Hrs.)**

- ਸਮਾਜਿਕ ਗਤੀਸ਼ੀਲਤਾ : ਅਰਥ, ਕਾਰਨ, ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ, ਕਿਸਮਾਂ

**Recommended Books:**

1. Ghurya G.S. (1983) : Cast, Class and occupation, Bombay Popular Prakashan
2. Bendix, RS Lipset, SM (1974) : Class, Status, Power, Social Stratification in comparative perspective, London, Routledge & Kegan Paul

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SYLLABUS 2023 BATCH ONWARDS**

**Elective Computer – II**

**Subject Code: BACSD1-219**

**L T P C  
4 0 0 4**

**Duration: 60 Hrs.**

**Prerequisite - Elective Computer – I**

| COs | Course Outcomes  | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 |
|-----|--|-----|-----|-----|-----|-----|-----|
| CO1 | Describe basic knowledge of DHTML and CSS  |     |     | 3   |     | 2   |     |
| CO2 | Analyze the utility of different tools in web designing for different applications |     |     | 2   |     | 3   |     |
| CO3 | Students should be able to design and implement a basic website.                   | 1   |     | 3   |     | 3   |     |

**UNIT - I**

**Introduction to DHTML:** Basics of DHTML, difference between HTML & DHTML, Structure of an DHTML program, client-side script and server-side script.

**UNIT - II**

**CSS:** introduction to CSS3, ways to Insert CSS in HTML document (External Style Sheet, Internal Style Sheet, Inline Styles), CSS id and class, div and span tag.

**UNIT - III**

**CSS background:** background color, background image (repeat horizontally or vertically, set position and no-repeat)

**CSS Text:** text color, text alignment, text decoration

**CSS Font:** style, family, Size CSS lists, CSS Links

**UNIT - IV**

**CSS Tables:** Table borders, collapse borders, table width and height, table text alignment, table padding, table color.

**CSS border:** style, width, color

**CSS margin:** margin, padding

*\*Faculty members can take practical sessions during the lectures.*

**Recommended Books:**

1. Kogent Learning Solutions Inc., "HTML 5 in simple steps", Dreamtech Press.
2. Murray, Tom/Lynchburg, "Creating a Web Page and Web Site", 2002.
3. Steven M. Schafer, "HTML, XHTML, and CSS Bible, 5ed", Wiley India.