

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI
CHOICE BASED CREDIT SYSTEM (CBCS)
SCHEME OF TEACHING AND EXAMINATION 2015-2016

B.E. Computer Science & Engineering/ B.E. Information Science & Engineering

III SEMESTER

| Sl. No | Subject Code | Title | Teaching Hours /Week | | Examination | | | Credits | |
|--------------|--------------|---|----------------------|--------------------|-------------|-------------------------|------------|------------|-------------|
| | | | Theory | Practical/ Drawing | Duration | Theory/ Practical Marks | I.A. Marks | | Total Marks |
| 1 | 15MAT31 | Engineering Mathematics - III | 04 | -- | 03 | 80 | 20 | 100 | 4 |
| 2 | 15CS32 | Analog and Digital Electronics | 04 | -- | 03 | 80 | 20 | 100 | 4 |
| 3 | 15CS33 | Data Structures and Applications | 04 | -- | 03 | 80 | 20 | 100 | 4 |
| 4 | 15CS34 | Computer Organization | 04 | -- | 03 | 80 | 20 | 100 | 4 |
| 5 | 15CS35 | Unix and Shell Programming | 04 | -- | 03 | 80 | 20 | 100 | 4 |
| 6 | 15CS36 | Discrete Mathematical Structures | 04 | -- | 03 | 80 | 20 | 100 | 4 |
| 7 | 15CSL37 | Analog and Digital Electronics Laboratory | -- | 1I+2P | 03 | 80 | 20 | 100 | 2 |
| 8 | 15CSL38 | Data Structures Laboratory | -- | 1I+2P | 03 | 80 | 20 | 100 | 2 |
| TOTAL | | | 24 | 6 | 24 | 640 | 160 | 800 | 28 |

Note: 'I' Stands for Instruction Hours and 'P' for practical Hours

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IV SEMESTER

| Sl. No | Subject Code | Title | Teaching Hours /Week | | Examination | | | Credits | |
|--------------|--------------|--|----------------------|-----------------------|-------------|-------------------------------|------------|------------|-------------|
| | | | Theory | Practical/ Drawing | Duration | Theory/ Practical Marks | I.A. Marks | | Total Marks |
| 1 | 15MAT41 | Engineering Mathematics - IV | 04 | -- | 03 | 80 | 20 | 100 | 4 |
| 2 | 15CS 42 | Software Engineering | 04 | -- | 03 | 80 | 20 | 100 | 4 |
| 3 | 15CS43 | Design and Analysis of Algorithms | 04 | -- | 03 | 80 | 20 | 100 | 4 |
| 4 | 15CS 44 | Microprocessors and Microcontrollers | 04 | -- | 03 | 80 | 20 | 100 | 4 |
| 5 | 15CS45 | Object Oriented Concepts | 04 | -- | 03 | 80 | 20 | 100 | 4 |
| 6 | 15CS46 | Data Communication | 04 | -- | 03 | 80 | 20 | 100 | 4 |
| 7 | 15CSL47 | Design and Analysis of Algorithm Laboratory | -- | 1I+2P | 03 | 80 | 20 | 100 | 2 |
| 8 | 15CSL48 | Microprocessors Laboratory | -- | 1I+2P | 03 | 80 | 20 | 100 | 2 |
| TOTAL | | | 24 | 06 | 24 | 640 | 160 | 800 | 28 |

Note: 'I' Stands for Instruction Hours and 'P' for practical Hours

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V SEMESTER

| Sl. No | Subject Code | Title | Teaching Hours /Week | | Examination | | | | Credits |
|--------------|--------------|---|----------------------|-----------------------|-------------|-------------------------------|---------------|-------------|-----------|
| | | | Theory | Practical/ Drawing | Duration | Theory/ Practical Marks | I.A. Marks | Total Marks | |
| 1 | 15CS51 | Management and Entrepreneurship for IT Industry | 04 | -- | 03 | 80 | 20 | 100 | 4 |
| 2 | 15CS52 | Computer Networks | 04 | -- | 03 | 80 | 20 | 100 | 4 |
| 3 | 15CS53 | Database Management System | 04 | -- | 03 | 80 | 20 | 100 | 4 |
| 4 | 15CS54 | Automata theory and Computability | 04 | -- | 03 | 80 | 20 | 100 | 4 |
| 5 | 15CS55x | Professional Elective 1 | 03 | -- | 03 | 80 | 20 | 100 | 3 |
| 6 | 15CS56x | Open Elective 1 | 03 | -- | 03 | 80 | 20 | 100 | 3 |
| 7 | 15CSL57 | Computer Network Laboratory | -- | 1I+2P | 03 | 80 | 20 | 100 | 2 |
| 8 | 15CSL58 | DBMS Laboratory with mini project | -- | 1I+2P | 03 | 80 | 20 | 100 | 2 |
| TOTAL | | | 22 | 6 | 24 | 640 | 160 | 800 | 26 |

| Professional Elective 1 | |
|--------------------------------|-------------------------------------|
| 15CS551 | Object Oriented Modeling and Design |
| 15CS552 | Introduction to Software Testing |
| 15CS553 | Advanced JAVA and J2EE |
| 15CS554 | Advanced Algorithms |

1. **Professional Elective: Electives relevant to chosen specialization / branch**
2. **Open Elective: Electives from other technical and/or emerging subject areas (Announced separately)**

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VI SEMESTER

| Sl. No | Subject Code | Title | Teaching Hours /Week | | Examination | | | | Credits |
|--------------|--------------|---|----------------------|-----------------------|-------------|-------------------------------|---------------|-------------|-----------|
| | | | Theory | Practical/ Drawing | Duration | Theory/ Practical Marks | I.A. Marks | Total Marks | |
| 1 | 15CS61 | Cryptography, Network Security and Cyber Law | 04 | -- | 03 | 80 | 20 | 100 | 4 |
| 2 | 15CS62 | Computer Graphics and Visualization | 04 | -- | 03 | 80 | 20 | 100 | 4 |
| 3 | 15CS63 | System Software and Compiler Design | 04 | -- | 03 | 80 | 20 | 100 | 4 |
| 4 | 15CS64 | Operating Systems | 04 | -- | 03 | 80 | 20 | 100 | 4 |
| 5 | 15CS65x | Professional Elective 2 | 03 | -- | 03 | 80 | 20 | 100 | 3 |
| 6 | 15CS66x | Open Elective 2 | 03 | -- | 03 | 80 | 20 | 100 | 3 |
| 7 | 15CSL67 | System Software and Operating System Laboratory | -- | 1I+2P | 03 | 80 | 20 | 100 | 2 |
| 8 | 15CSL68 | Computer Graphics Laboratory with mini project | -- | 1I+2P | 03 | 80 | 20 | 100 | 2 |
| TOTAL | | | 22 | 6 | 24 | 640 | 160 | 800 | 26 |

| Professional Elective 2 | |
|--------------------------------|---|
| 15CS651 | Data Mining and Data Warehousing |
| 15CS652 | Software Architecture and Design Patterns |
| 15CS653 | Operation research |
| 15CS654 | Distributed Computing system |

1. **Professional Elective: Electives relevant to chosen specialization / branch**
2. **Open Elective: Electives from other technical and/or emerging subject areas (Announced separately)**

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VII SEMESTER

| Sl. No | Subject Code | Title | Teaching Hours /Week | | Examination | | | | Credits |
|--------|--------------|---|----------------------|-----------------------|-------------|------------|-------------------------------|-------------|---------|
| | | | Theory | Practical/ Drawing | Duration | I.A. Marks | Theory/ Practical Marks | Total Marks | |
| 1 | 15CS71 | Web Technology and its applications | 04 | -- | 03 | 20 | 80 | 100 | 4 |
| 2 | 15CS72 | Advanced Computer Architectures | 04 | -- | 03 | 20 | 80 | 100 | 4 |
| 3 | 15CS73 | Machine Learning | 04 | -- | 03 | 20 | 80 | 100 | 4 |
| 4 | 15CS74x | Professional Elective 3 | 03 | -- | 03 | 20 | 80 | 100 | 3 |
| 5 | 15CS75x | Professional Elective 4 | 03 | -- | 03 | 20 | 80 | 100 | 3 |
| 6 | 15CSL76 | Machine Learning Laboratory | -- | 1I+2P | 03 | 20 | 80 | 100 | 2 |
| 7 | 15CSL77 | Web Technology Laboratory with mini project | -- | 1I+2P | 03 | 20 | 80 | 100 | 2 |
| 8 | 15CSP78 | Project Phase 1 + Seminar | -- | -- | -- | 100 | -- | 100 | 2 |
| TOTAL | | | 18 | 6 | 21 | 240 | 560 | 800 | 24 |

| Professional Elective 3 | | Professional Elective 4 | |
|-------------------------|--------------------------------------|-------------------------|---------------------------------|
| 15CS741 | Natural Language Processing | 15CS751 | Soft and Evolutionary Computing |
| 15CS742 | Cloud Computing and its Applications | 15CS752 | Computer Vision and Robotics |
| 15CS743 | Information and Network Security | 15CS753 | Digital Image Processing |
| 15CS744 | Unix System Programming | 15CS754 | Storage Area Networks |

1. Professional Elective: Electives relevant to chosen specialization / branch
2. Project Phase 1 + Seminar : Literature Survey, Problem Identification, Objectives and Methodology, Submission of Synopsis and Seminar

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B.E. Computer Science & Engineering
 VIII SEMESTER

| Sl. No | Subject Code | Title | Teaching Hours /Week | | Examination | | | Credits | |
|--------|--------------|-------------------------------------|----------------------|-----------------------|-------------|------------|-------------------------------|---------|-------------|
| | | | Theory | Practical/ Drawing | Duration | I.A. Marks | Theory/ Practical Marks | | Total Marks |
| 1 | 15CS81 | Internet of Things and Applications | 4 | -- | 3 | 20 | 80 | 100 | 4 |
| 2 | 15CS82 | Big Data Analytics | 4 | -- | 3 | 20 | 80 | 100 | 4 |
| 3 | 15CS83x | Professional Elective 5 | 3 | -- | 3 | 20 | 80 | 100 | 3 |
| 4 | 15CS84 | Internship / Professional Practice | Industry Oriented | | 3 | 50 | 50 | 100 | 2 |
| 5 | 15CSP85 | Project work phase II | -- | 6 | 3 | 100 | 100 | 200 | 5 |
| 6 | 15CSS86 | Seminar | -- | 4 | -- | 100 | -- | 100 | 2 |
| TOTAL | | | 11 | 10 | 15 | 310 | 390 | 700 | 20 |

| Professional Elective 5 | |
|-------------------------|--------------------------------|
| 15CS831 | High Performance Computing |
| 15CS832 | User Interface Design |
| 15CS833 | Network management |
| 15CS834 | System Modeling and Simulation |

1. Professional Elective: Electives relevant to chosen specialization / branch
2. Internship / Professional Practice: To be carried out between 6th and 7th semester vacation or 7th and 8th semester vacation period