**COURSE OUTCOMES**

**SEMSTER-I**

**Course Name: C101 (HS6151/ Technical English - I)**

At the end of the course, the student should be able to:

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| **C101.1** | Develop their basic communication skills & vocabulary of Engineering and Technology. |
| **C101.2** | Gain knowledge of asking and answering questions. |
| **C101.3** | Participate effectively in the formal conversation and interpreting visual materials. |
| **C101.4** | Gain the knowledge of answering questions based on documentaries and write different types of essays. |
| **C101.5** | Listen/view and comprehend different spoken discourses/excerpts in different accents. Write Sending and Receiving E-mail. Making presentation on given topic. |

**CO-PO -PSO CORRELATION LEVEL MATRIX:**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C101.1** | 3 | 1 | - | 1 | 1 | 1 | - | 2 | 1 | 3 | 2 | 3 | - | - |
| **C101.2** | 2 | - | - | - | - | 1 | - | - | 2 | 1 | 1 | 3 | 1 | - |
| **C101.3** | 1 | - | - | 1 | - | 2 | - | 1 | - | 2 | 3 | - | - | - |
| **C101.4** | - | 1 | - | - | - | 1 | - | - | - | 2 | - | - | - | - |
| **C101.5** | - | 1 | - | 1 | - | 1 | - | - | - | 3 | 1 | - | - | - |
| **C101** | 2 | 1 | - | 1 | 1 | 1 | - | 2 | 2 | 2 | 2 | 3 | 1 | - |

**Course Name: C102 (MA6151/ Mathematics - I)**

At the end of the course, the student should be able to:

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| --- | --- |
| **C102.1** | Developing the use of matrix algebra techniques this is needed by engineers for practical applications |
| **C102.2** | Distinguishing the difference between a sequence and a series in the mathematical context. |
| **C102.3** | Testing for the student with functions of several variables. This is needed in many branches of engineering. |
| **C102.4** | Evaluate the maxima and minima value functions of two variables. |
| **C102.5** | Improving the student with mathematical tools needed in evaluating multiple integrals and their usage |

**CO-PO-PSO CORRELATION LEVEL MATRIX:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C102.1** | 3 | 3 | - | 2 | - | - | - | - | - | - | - | 2 | 2 | - |
| **C102.2** | 3 | 3 | - | 2 | - | - | - | - | - | - | - | 2 | 2 | - |
| **C102.3** | 3 | 3 | - | 2 | - | - | - | - | - | - | - | 2 | 2 | - |
| **C102.4** | 3 | 3 | - | 2 | - | - | - | - | - | - | - | 2 | 2 | - |
| **C102.5** | 3 | 3 | - | 2 | - | - | - | - | - | - | - | 2 | 2 | - |
| **C102** | 3 | 3 | - | 2 | - | - | - | - | - | - | - | 2 | 2 | - |

**Course Name: C103 (PH6151/Engineering Physics – I)**

At the end of the course, the student should be able to:

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| --- | --- |
| **C103.1** | Understand the basic concepts of crystal ,crystal structure and growth techniques |
| **C103.2** | Explain the elastic nature of materials and determine the thermal conductivity of bad and good conductor by various methods. |
| **C103.3** | Apply the concepts of quantum theory to various microscope techniques |
| **C103.4** | construct the buildings based on the acoustical properties and explain the applications of ultrasonic waves in industrial and medical field |
| **C103.5** | Classification of lasers and optical fibers and their applications in engineering, medical field. |

**CO-PO-PSO CORRELATION LEVEL MATRIX:**

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| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C103.1** | 2 | 2 | 2 | 2 | 1 | - | - | - | - | - | - | - | 1 | - |
| **C103.2** | 2 | 2 | 2 | 2 | 1 | - | - | - | - | - | - | - | 2 | - |
| **C103.3** | 2 | 1 | 2 | 2 | 3 | - | - | - | - | - | - | - | 2 | - |
| **C103.4** | 2 | 2 | 2 | 2 | 3 | - | - | - | - | - | - | - | 2 | - |
| **C103.5** | 2 | 3 | 2 | 2 | 2 | - | - | - | - | - | - | - | - | - |
| **C103** | 2 | 2 | 2 | 2 | 2 | - | - | - | - | - | - | - | 2 | - |

**Course Name: C104 (CY6151/Engineering Chemistry – I)**

At the end of the course, the student should be able to:

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| --- | --- |
| **C104.1** | Understand the requirements boiler feed water, related problems and interpretation of water treatment techniques |
| **C104.2** | Learn of the basic concepts of phase rule and its applications to various systems and appreciate the purpose and significance of alloys |
| **C104.3** | Infer the preparation, properties and applications of engineering materials |
| **C104.4** | Gain of knowledge on types of fuels, calorific value calculations, manufacture of solid, liquid and gaseous fuels |
| **C104.5** | Understand the principles and demonstration of energy storage devices |

**CO-PO-PSO CORRELATION LEVEL MATRIX:**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C104.1** | 3 | 1 | 2 | - | - | - | 1 | - | - | - | - | 1 | - | - |
| **C104.2** | 3 | 2 | - | - | - | - | - | - | - | - | - | 1 | 1 | - |
| **C104.3** | 3 | 1 | - | - | 1 | - | - | - | - | - | - | 1 | - | - |
| **C104.4** | 3 | 1 | 2 | - | - | - | - | - | - | - | - | 1 | - | - |
| **C104.5** | 3 | 3 | 2 | 2 | 1 | - | - | - | - | - | - | 1 | 1 | - |
| **C104** | 3 | 2 | 2 | 2 | 1 | - | 1 | - | - | - | - | 1 | 1 | - |

**Course Name: C105 (GE6151/Computer Programming)**

At the end of the course, the student should be able to:

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| --- | --- |
| **C105.1** | Understand the basic concepts of computer organization |
| **C105.2** | Understand the basic concepts of C programming language |
| **C105.3** | Create matrix operation programs using arrays concepts |
| **C105.4** | Develop simple C applications using functions and pointers |
| **C105.5** | Implement the concept of structures and unions in simple applications |

**CO-PO -PSO CORRELATION LEVEL MATRIX:**

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| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C105.1** | 3 | 2 | 3 | 3 | 3 | - | - | - | - | - | - | - | 1 | 3 |
| **C105.2** | 3 | 2 | 2 | 3 | 3 | - | - | - | - | - | - | - | 2 | 2 |
| **C105.3** | 3 | 2 | 2 | 2 | 2 | - | - | - | - | - | - | - | 3 | 3 |
| **C105.4** | 3 | 2 | 3 | 2 | 2 | - | - | - | - | - | - | - | 3 | 2 |
| **C105.5** | 3 | 2 | 2 | 3 | 3 | - | - | - | - | - | - | - | 3 | 3 |
| **C105** | 3 | 2 | 2 | 3 | 3 | - | - | - | - | - | - | - | 2 | 3 |

**Course Name: C106 (GE6152/Engineering Graphics)**

At the end of the course, the student should be able to:

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| --- | --- |
| **C106.1** | Know the fundamentals and standards of Engineering graphics |
| **C106.2** | Perform freehand sketching of basic geometrical constructions and multiple views of objects. |
| **C106.3** | Project orthographic projections of lines and plane surfaces. |
| **C106.4** | Draw projections and solids and development of surfaces. |
| **C106.5** | Visualize and to project isometric and perspective sections of simple solids. |

**CO-PO-PSO CORRELATION LEVEL MATRIX:**

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| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C106.1** | 1 | - | - | - | - | - | - | - | - | - | - | 2 | 1 | - |
| **C106.2** | 2 | - | - | - | - | - | - | - | - | - | - | 2 | 1 | - |
| **C106.3** | 2 | - | - | - | - | - | - | - | - | - | - | 1 | 1 | - |
| **C106.4** | 3 | - | - | - | - | - | - | - | - | - | - | 2 | 1 | - |
| **C106.5** | 3 | - | - | - | - | - | - | - | - | - | - | 1 | 1 | - |
| **C106** | 2 | - | - | - | - | - | - | - | - | - | - | 2 | 1 | - |

**Course Name: C107 (GE6161/Computer Practices Laboratory)**

At the end of the course, the student should be able to:

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| **C107.1** | Use word processing, spread sheet and power point software tools |
| **C107.2** | Model and debug the C language programs |
| **C107.3** | Explain the simple search and sort algorithms. |
| **C107.4** | Review the use of pointers in C programming. |
| **C107.5** | Analyze the arrays, functions , recursive functions and structures in C programming. |

**CO-PO- PSO CORRELATION LEVEL MATRIX:**

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| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C107.1** | 3 | 3 | 3 | 3 | 3 | 3 | - | - | 2 | 3 | 3 | 3 | 3 | 3 |
| **C107.2** | 3 | 3 | 3 | 3 | - | 3 | - | - | 3 | - | 3 | 3 | 3 | 3 |
| **C107.3** | 3 | 3 | 3 | 3 | - | - | - | - | 2 | - | 3 | - | 2 | 2 |
| **C107.4** | 3 | 3 | 3 | 3 | - | - | - | - | 2 | - | 3 | - | 3 | 3 |
| **C107.5** | 3 | 3 | 3 | 3 | - | - | - | - | 2 | - | 3 | - | 3 | 3 |
| **C107** | 3 | 3 | 3 | 3 | 3 | 3 | - | - | 2 | 3 | 3 | 3 | 3 | 3 |

**Course Name: C108 (GE6162/Engineering Practices Laboratory)**

At the end of the course, the student should be able to:

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| **C108.1** | Ability to fabricate building, plumbing and carpentry works |
| **C108.2** | Ability to use welding, machining equipments to join the structures. |
| **C108.3** | Ability to assemble machinery components. |
| **C108.4** | Ability to fabricate electrical circuits |
| **C108.5** | Ability to fabricate electronics circuits |

**CO-PO-PSO CORRELATION LEVEL MATRIX:**

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| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C108.1** | 3 | 3 | 3 | 3 | 3 | - | - | - | - | - | - | - | 3 | - |
| **C108.2** | 3 | 3 | 3 | 3 | 3 | - | - | - | - | - | - | - | 3 | - |
| **C108.3** | 3 | 3 | 3 | 3 | 3 | - | - | - | - | - | - | - | 3 | - |
| **C108.4** | 3 | 3 | 3 | 3 | 3 | - | - | - | - | - | - | - | 3 | - |
| **C108.5** | 3 | 3 | 3 | 3 | 3 | - | - | - | - | - | - | 1 | 3 | - |
| **C108** | 3 | 3 | 3 | 3 | 3 | - | - | - | - | - | - | 1 | 3 | - |

**Course Name: C109 (GE6163/Physics and Chemistry Laboratory-I )**

At the end of the course, the student should be able to:

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| --- | --- |
| **C109.1** | Apply Principles of Optics and sound to evaluate engineering properties of material. |
| **C109.2** | Determine the Young’s Modulus, Thermal conductivity Specific resistance of the materials. |
| **C109.3** | Acquire practical skills in the determination of water quality parameters through volumetric and instrumental analysis |
| **C109.4** | Gain of practical skills in the determination of composition of metal through volumetric and instrumental analysis |
| **C109.5** | Acquire practical skills in the determination of qualitative and quantitative analysis of acids through volumetric and instrumental analysis |

**CO-PO-PSO CORRELATION LEVEL MATRIX:**

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| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C109.1** | 2 | 2 | 2 | 1 | 2 | - | - | - | - | - | 1 | - | - | - |
| **C109.2** | 2 | 2 | 2 | 1 | 2 | - | - | - | - | - | 1 | - | - | - |
| **C109.3** | 2 | 2 | 2 | 1 | 3 | - | - | - | - | - | 3 | - | - | - |
| **C109.4** | 2 | 2 | 2 | 1 | 2 | - | - | - | - | - | 3 | - | - | - |
| **C109.5** | 2 | 2 | 1 | 2 | 3 | - | - | - | - | - | 2 | - | - | - |
| **C109** | 2 | 2 | 2 | 1 | 2 | - | - | - | - | - | 2 | - | - | - |

**SEMSTER-II**

**Course Name: C110 (HS6251/Technical English - II)**

At the end of the course, the student should be able to:

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| **C110 .1** | Listen to different types of conversation and answering questions. |
| **C110 .2** | Participate effectively in informal conversation, reviewing a film and writing an article. |
| **C110.3** | Learn intonation, pronunciation and meaning. Write Technical article. Attending a meeting and writing minutes. |
| **C110 .4** | Writing job applications, cover letter and resume. |
| **C110.5** | Listen/view and comprehend different spoken excerpts critically and infer unspoken and implied meanings. Write Feasibility / Project Report, Make presentations and Participate in Group Discussions. |

**CO-PO -PSO CORRELATION LEVEL MATRIX:**

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| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C110 .1** | 3 | 2 | 1 | 1 | 2 | 1 | 2 | - | 3 | 3 | - | - | **-** | **-** |
| **C110 .2** | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 2 | - | 2 | - | 3 | **-** | **-** |
| **C110 .3** | 1 | - | 1 | 1 | - | 2 | - | 1 | - | - | 1 | - | 1 | **-** |
| **C110 .4** | - | - | - | - | - | 1 | - | - | 2 | - | 1 | 3 | **-** | **-** |
| **C110 .5** | 3 | 1 | 2 | 1 | 1 | 1 | 1 | - | 2 | 3 | - | - | **-** | **-** |
| **C110** | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 2 | 2 | 3 | 1 | 3 | 1 | - |

**Course Name: C111** **(MA6251/Mathematics - II)**

At the end of the course, the student should be able to:

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| **C111.1** | Explaining the student with the concepts of vector calculus needed for problems in all engineering disciplines |
| **C111.2** | applying the student acquire sound knowledge of techniques in solving ordinary differential equations that model engineering problems |
| **C111.3** | Simplifying the Laplace Transform, Inverse Laplace Transform of various functions, its application and Z-transform |
| **C111.4** | Testing for the student with analytic functions and necessary conditions. This is needed in many branches of engineering. |
| **C111.5** | Solving the ability to integrate knowledge and ideas of complex integration |

**CO-PO-PSO CORRELATION LEVEL MATRIX:**

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| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C111.1** | 3 | 3 | - | 2 | - | - | - | - | - | - | - | 2 | 2 | - |
| **C111.2** | 3 | 3 | - | 2 | - | - | - | - | - | - | - | 2 | 2 | - |
| **C111.3** | 3 | 3 | - | 2 | - | - | - | - | - | - | - | 2 | 2 | - |
| **C111.4** | 3 | 3 | - | 2 | - | - | - | - | - | - | - | 2 | 2 | - |
| **C111.5** | 3 | 3 | - | 2 | - | - | - | - | - | - | - | 2 | 2 | - |
| **C111** | 3 | 3 | - | 2 | - | - | - | - | - | - | - | 2 | 2 | - |

**Course Name: C112** **(PH6251/Engineering Physics - II)**

At the end of the course, the student should be able to:

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| --- | --- |
| **C112**.1 | Understand the basic concepts of conducting materials. |
| **C112**.2 | Learning the properties of semiconductor and determine the carrier concentration of semiconductors |
| **C112**.3 | Classify the magnetic ,superconducting materials |
| **C112**.4 | Acquire Importance of dielectric materials and their applications |
| **C112**.5 | Explain the preparation techniques, properties and applications of advanced engineering materials. |

**CO-PO-PSO CORRELATION LEVEL MATRIX:**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C112.1** | 2 | 2 | 2 | 2 | 1 | - | - | - | - | - | - | - | 1 | - |
| **C112.2** | 2 | 2 | 3 | 2 | 2 | - | - | - | - | - | - | - | - | - |
| **C112.3** | 2 | 2 | 3 | 2 | 3 | - | - | - | - | - | - | - | 2 | - |
| **C112.4** | 2 | 2 | 2 | 2 | 2 | - | - | - | - | - | - | - | 1 | - |
| **C112.5** | 2 | 2 | 3 | 3 | 3 | - | - | - | - | - | - | - | - | - |
| **C112** | 2 | 2 | 3 | 2 | 2 | - | - | - | - | - | - | - | 1 | - |

**Course Name: C113** **(CY6251/Engineering Chemistry - II)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C113.1** | Understand the requirements boiler feed water, related problems and interpretation of water treatment techniques |
| **C113.2** | Learn and apply the principles of electrochemical reactions, redo reactions in corrosion of materials and methods for corrosion prevention and protection of materials |
| **C113.3** | Understand the principles and demonstration of energy storage devices |
| **C113.4** | Infer the preparation, properties and applications of engineering materials |
| **C113.5** | Gain of knowledge on types of fuels, calorific value calculations, manufacture of solid, liquid and gaseous fuels |

**CO-PO-PSO CORRELATION LEVEL MATRIX:**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C113.1** | 3 | 2 | 1 | - | 3 | - | 1 | - | - | - | 2 | 1 | **-** | **-** |
| **C113.2** | 3 | 2 | 1 | 1 | 2 | - | - | - | - | - | 2 | 1 | **-** | **-** |
| **C113.3** | 3 | 1 | 1 | - | 3 | - | 2 | - | - | - | 2 | 1 | **-** | **-** |
| **C113.4** | 3 | - | - | - | 2 | - | - | - | - | - | 2 | 1 | **-** | **-** |
| **C113.5** | 3 | 2 | 1 | - | 2 | - | - | - | - | - | 2 | 1 | **-** | **-** |
| **C113** | 3 | 2 | 1 | 1 | 2 | - | 2 | - | - | - | 2 | 1 | - | - |

**Course Name: C114 (CS6201/Digital Principles and System Design)**

At the end of the course, the student should be able to:

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| --- | --- |
| **C114.1** | Understand basic concept of various number systems and simplification of Boolean function. |
| **C114.2** | Design and realize combinational hardware circuits. |
| **C114.3** | Analyze and design synchronous sequential hardware circuits. |
| **C114.4** | Analyze and design asynchronous sequential hardware circuits. |
| **C114.5** | Design digital circuits using PLD. |

**CO-PO-PSO CORRELATION LEVEL MATRIX:**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C114.1** | 3 | 2 | 2 | 2 | 1 | - | - | - | - | 2 | - | 2 | 1 | 1 |
| **C114.2** | 3 | 3 | 3 | 2 | 1 | - | - | - | - | 2 | - | 2 | 1 | 1 |
| **C114.3** | 3 | 3 | 3 | 2 | 1 | - | - | - | - | 2 | - | 2 | 1 | 1 |
| **C114.4** | 3 | 3 | 3 | 2 | 1 | - | - | - | - | 2 | - | 2 | 1 | 1 |
| **C114.5** | 3 | 3 | 3 | 2 | 1 | - | - | - | - | 2 | - | 2 | 1 | 1 |
| **C114** | 3 | 3 | 3 | 2 | 1 | - | - | - | - | 2 | - | 2 | 1 | 1 |

**Course Name: C115(CS6202/ Programming and Data Structures I)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C115.1** | Explain the fundamental concept of control structures and pointers in C |
| **C115.2** | Make use of structures and File concepts to develop a C program |
| **C115.3** | Discuss about the various linear data structure operations and applications using ADT. |
| **C115.4** | Explain the various algorithms for sorting and searching |
| **C115.5** | Critically analyze the various algorithms in Hash functions and demonstrate the indexing techniques in data structures |

**CO-PO -PSO CORRELATION LEVEL MATRIX:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C115.1** | 3 | 3 | 3 | 3 | 1 | - | - | - | - | - | 3 | 3 | 3 | 3 |
| **C115.2** | 3 | 3 | 3 | 3 | 1 | - | - | - | - | - | 3 | 3 | 3 | 3 |
| **C115.3** | 3 | 3 | 3 | 3 | 1 | - | - | - | - | - | 2 | 3 | 3 | 3 |
| **C115.4** | 3 | 3 | 3 | 3 | 1 | - | - | - | - | - | 2 | 3 | 3 | 3 |
| **C115.5** | 3 | 3 | 3 | 3 | 2 | - | - | - | - | - | 2 | 3 | 3 | 3 |
| **C115** | 3 | 3 | 3 | 3 | 1 | - | - | - | - | - | 2 | 3 | 3 | 3 |

**Course Name: C116 (GE6262/Physics and Chemistry Laboratory-II)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C116.1** | Apply Principles of Optics and sound to evaluate engineering properties of material. |
| **C116.2** | Determine the Young’s Modulus, Thermal conductivity Specific resistance of the materials. |
| **C116.3.** | Acquire practical skills in the determination of water quality parameters through volumetric and instrumental analysis |
| **C116.4** | Gain of practical skills in the determination of composition metals through volumetric and instrumental analysis |
| **C116.5** | Acquire practical skills in the determination of qualitative and quantitative analysis of acids through volumetric and instrumental analysis |

**CO-PO-PSO CORRELATION LEVEL MATRIX:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C116.1** | 2 | 2 | 2 | 1 | 2 | - | - | - | - | - | 1 | - | - | - |
| **C116.2** | 2 | 2 | 2 | 1 | 2 | - | - | - | - | - | 1 | - | - | - |
| **C116.3.** | 2 | 2 | 2 | 1 | 3 | - | - | - | - | - | 3 | - | - | - |
| **C116.4** | 2 | 2 | 2 | 1 | 2 | - | - | - | - | - | 3 | - | - | - |
| **C116.5** | 2 | 2 | 1 | 2 | 3 | - | - | - | - | - | 2 | - | - | - |
| **C116** | 2 | 2 | 2 | 1 | 2 | - | - | - | - | - | 2 | - | - | - |

**Course Name: C117** **(CS6211/Digital Laboratory)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C117.1** | Design a combinational hardware circuits using Boolean simplification techniques. |
| **C117.2** | Design and implement combinational and sequential circuits. |
| **C117.3.** | Design combinational/ sequential circuits using HDL. |
| **C117.4** | Design and implement a simple digital system. |
| **C117.5** | Design a combinational hardware circuits using Boolean simplification techniques. |

**CO-PO-PSO CORRELATION LEVEL MATRIX:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C117.1** | 3 | 3 | 3 | 2 | 2 | 2 | - | - | - | - | - | 2 | 1 | 1 |
| **C117.2** | 3 | 3 | 3 | 2 | 2 | 2 | - | - | - | - | - | 2 | 1 | 1 |
| **C117.3.** | 3 | 3 | 3 | 2 | 2 | 2 | - | - | - | - | - | 2 | 1 | 1 |
| **C117.4** | 3 | 3 | 3 | 2 | 2 | 2 | - | - | - | - | - | 2 | 1 | 1 |
| **C117.5** | 3 | 3 | 3 | 2 | 2 | 2 | - | - | - | - | - | 2 | 1 | 1 |
| **C117** | 3 | 3 | 3 | 2 | 2 | 2 | - | - | - | - | - | 2 | 1 | 1 |

**Course Name: C118** **(CS6212/Programming and Data structures Laboratory-I)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C118.1** | Design and implement C programs for implementing stacks, queues, linked lists |
| **C118.2** | Develop C program for Linear data structure operations and its applications |
| **C118.3.** | Experiment with File manipulation concepts |
| **C118.4** | Develop programs using various sorting algorithms |
| **C118.5** | Create programs using different searching methods and hash functions |

**CO-PO-PSO CORRELATION LEVEL MATRIX:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C118.1** | 3 | 3 | 3 | 2 | 2 | - | - | - | - | - | - | - | 3 | 2 |
| **C118.2** | 3 | 3 | 3 | 1 | 2 | - | - | - | - | - | - | - | 3 | 2 |
| **C118.3.** | 3 | 3 | 3 | 1 | 2 | - | - | - | - | - | - | - | 3 | 2 |
| **C118.4** | 3 | 3 | 3 | - | 2 | - | - | - | - | - | - | - | 3 | 2 |
| **C118.5** | 3 | 3 | 3 | - | 2 | - | - | - | - | - | - | - | 3 | 2 |
| **C118** | 3 | 3 | 3 | 1 | 2 | - | - | - | - | - | - |  | 3 | 2 |

**SEMSTER-III**

**Course Name: C201 (MA6351 /Transforms and Partial Differential Equations**)

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C201.1** | Introducing the effective mathematical tools for the solutions of partial differential equations that model several physical processes |
| **C201.2** | Introducing Fourier series analysis which is central to many applications in engineering |
| **C201.3** | Understanding partial differential equations would provide them the ability to formulate and solve some of the physical problems of engineering. |
| **C201.4** | Acquainting the student with Fourier transform techniques used in wide variety of situations |
| **C201.5** | Developing Z transform techniques for discrete time systems |

**CO-PO-PSO CORRELATION LEVEL MATRIX:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C201.1** | 3 | 3 | - | 2 | - | - | - | - | - | - | - | 2 | 2 | - |
| **C201.2** | 3 | 3 | - | 2 | - | - | - | - | - | - | - | 2 | 2 | - |
| **C201.3** | 3 | 3 | - | 2 | - | - | - | - | - | - | - | 2 | 2 | - |
| **C201.4** | 3 | 3 | - | 2 | - | - | - | - | - | - | - | 2 | 2 | - |
| **C201.5** | 3 | 3 | - | 2 | - | - | - | - | - | - | - | 2 | 2 | - |
| **C201** | 3 | 3 | - | 2 | - | - | - | - | - | - | - | 2 | 2 | - |

**Course Name: C202 (CS6301/ Programming and Data Structures II)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C202.1** | Explain the fundamentals of Object Oriented Programming |
| **C202.2** | Demonstrate the concepts of data abstraction, encapsulation and inheritance |
| **C202.3** | Outline the concepts of Exception handling and templates |
| **C202.4** | Summarize about tree preliminaries and other tree structures |
| **C202.5** | Demonstrate different graph data structure algorithms |

**CO-PO -PSO CORRELATION LEVEL MATRIX:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C202.1** | 3 | 2 | 3 | 1 | - | - | - | - | - | - | - | 2 | 1 | - |
| **C202.2** | 3 | 2 | 3 | 2 | - | - | - | - | - | - | - | 2 | 3 | 2 |
| **C202.3** | 3 | 2 | 3 | 2 | - | - | - | - | - | - | - | 2 | 3 | 2 |
| **C202.4** | 3 | 1 | - | - | - | - | - | - | - | - | - | 3 | 2 | 2 |
| **C202.5** | 3 | 3 | 3 | 2 | - | - | - | - | - | - | - | 3 | 2 | 2 |
| **C202** | 3 | 2 | 3 | 2 | - | - | - | - | - | - | - | 2 | 2 | 2 |

**Course Name: C203 (CS6302/Database Management Systems)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C203.1** | Illustrate the database designs for applications. |
| **C203.2** | Make use of ER diagram and normalization techniques in database application. |
| **C203.3** | Apply concurrency control & recovery mechanism for database problems. |
| **C203.4** | Apply the various concepts in query processing. |
| **C203.5** | Compare the various storage techniques in data mining. |

**CO-PO-PSO CORRELATION LEVEL MATRIX:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C203.1** | 3 | 3 | - | - | - | - | - | - | - | - | - | - | 3 | 3 |
| **C203.2** | 3 | 3 | - | 1 | - | 1 | - | - | - | - | - | - | 3 | 2 |
| **C203.3** | 3 | 3 | - | - | - | 1 | - | - | - | - | - | - | 3 | 2 |
| **C203.4** | 3 | 3 | - | - | - | - | - | - | - | - | - | - | 3 | 2 |
| **C203.5** | 3 | 3 | - | 2 | - | 2 | 1 | - | - | - | - | 1 | 3 | 2 |
| **C203** | 3 | 3 | - | 1 | - | 1 | 1 | - | - | - | - | 1 | 3 | 2 |

**Course Name: C204 (CS6303/ Computer Architecture)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C204.1** | Understand the computer organization components, instructions and addressing modes |
| **C204.2** | Design Arithmetic and logic unit for integer and floating point operations |
| **C204.3** | Interpret the basic of MIPS implementation and pipelining with its hazards |
| **C204.4** | Outline the concept of parallelism and multi-core processor |
| **C204.5** | Analyze the performance of various memory technologies and I/O systems |

**CO-PO-PSO CORRELATION LEVEL MATRIX:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C204.1** | 3 | 1 | - | 1 | - | - | - | - | - | - | - | - | 1 | - |
| **C204.2** | 2 | 2 | 3 | 3 | 2 | - | - | - | - | - | - | - | 3 | - |
| **C204.3** | 2 | 3 | 2 | 3 | 1 | - | - | - | - | - | - | - | 2 | - |
| **C204.4** | 1 | 2 | 3 | 1 | 1 | - | - | - | - | - | - | - | 2 | 1 |
| **C204.5** | 2 | 3 | 3 | 2 | 3 | - | - | - | - | - | - | - | 1 | 1 |
| **C204** | 2 | 2 | 3 | 2 | 2 | - | - | - | - | - | - | - | 2 | 1 |

**Course Name: C205 (CS6304/Analog and Digital Communication)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C205.1** | Illustrate analog communication Techniques |
| **C205.2** | Explain digital communication Techniques |
| **C205.3** | Illustrate data and pulse communication techniques |
| **C205.4** | Make use of various error control coding techniques to identify/correct errors |
| **C205.5** | Explain the concept of GSM |

**CO-PO-PSO CORRELATION LEVEL MATRIX:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C205.1** | 2 | 1 | 1 | 1 | - | - | - | - | - | - | - | - | 2 | 1 |
| **C205.2** | 2 | 1 | 1 | 1 | - | - | - | - | - | - | - | - | 2 | 1 |
| **C205.3** | 2 | 1 | 1 | 1 | - | - | - | - | - | - | - | - | 2 | 1 |
| **C205.4** | 3 | 2 | 2 | 2 | - | 1 | - | - | - | - | - | - | 3 | 2 |
| **C205.5** | 3 | 1 | - | - | - | - | - | - | - | - | - | - | 3 | 1 |
| **C205** | 2 | 1 | 1 | 1 | - | 1 | - | - | - | - | - | - | 2 | 1 |

**Course Name: C206 (GE6351/Environmental Science and Engineering)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C206.1** | Acquire knowledge on the nature and facts about environment, ecosystem and biodiversity |
| **C206.2** | Finding and implementing scientific, technological, economic and political solutions to environmental problems, pollution control |
| **C206.3** | Infer availability of natural resources, and waste management dynamic processes and understand the features of the earth’s interior and surface |
| **C206.4** | Appreciate the importance of environment by assessing its impact on the human world; envision the surrounding environment, its functions and its value and to serious environmental disasters |
| **C206.5** | Aware of population explosion, HIV/AIDS and its environmental impacts at infant stage and understanding the importance of family planning, women and child welfare, value education. |

**CO-PO-PSO CORRELATION LEVEL MATRIX:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C206.1** | 2 | - | - | - | - | - | 2 | - | - | - | - | 1 | - | - |
| **C206.2** | 3 | - | 2 | - | 2 | - | 2 | - | - | - | 2 | 1 | 1 | - |
| **C206.3** | 3 | - | - | - | 2 | - | 2 | 1 | - | - | 2 | 1 | - | - |
| **C206.4** | 2 | - | - | - | - | 2 | 3 | 2 | - | - | - | 1 | - | 1 |
| **C206.5** | 2 | - | 1 | - | 2 | 1 | 1 | - | - | - | - | 1 | 1 | - |
| **C206** | 2 | - | 2 | - | 2 | 2 | 2 | 2 | - | - | 2 | 1 | 1 | 1 |

**Course Name: C207 (CS6311/ Programming and Data Structures Laboratory-II)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C207.1** | Understand the basics of object oriented programming |
| **C207.2** | Design and implement C++ programs for manipulating stacks, queues, linked lists, trees, and graphs. |
| **C207.3** | Apply good programming design methods for program development. |
| **C207.4** | Apply the different data structures for implementing solutions to practical problems. |
| **C207.5** | Develop recursive programs using trees and graphs. |

**CO-PO-PSO CORRELATION LEVEL MATRIX:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C207.1** | 3 | 2 | 3 | 1 | - | - | - | - | - | - | - | 2 | 1 | - |
| **C207.2** | 3 | 2 | 3 | 2 | - | - | - | - | - | - | - | 2 | 3 | 2 |
| **C207.3** | 3 | 2 | 3 | 2 | - | - | - | - | - | - | - | 2 | 3 | 2 |
| **C207.4** | 3 | 1 | - | - | - | - | - | - | - | - | - | 3 | 2 | 2 |
| **C207.5** | 3 | 3 | 3 | 2 | - | - | - | - | - | - | - | 3 | 2 | 2 |
| **C207** | 3 | 2 | 3 | 2 | - | - | - | - | - | - | - | 2 | 2 | 2 |

**Course Name: C208 (CS6312/Database Management Systems Laboratory)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C208.1** | Infer database language commands to create simple database. |
| **C208.2** | Analyze the database using queries to retrieve the records. |
| **C208.3** | Applying PL/SQL for processing database. |
| **C208.4** | Analyze front end tools to design forms, reports and menus. |
| **C208.5** | Develop solutions using database concepts for real time requirements. |

**CO-PO-PSO CORRELATION LEVEL MATRIX:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C208.1** | 3 | 3 | - | - | 1 | - | - | - | - | - | - | - | 1 | 2 |
| **C208.2** | 3 | 3 | - | 2 | 2 | 2 | - | - | - | - | - | - | 3 | 2 |
| **C208.3** | 3 | 3 | - | 2 | 2 | 2 | - | 2 | - | - | - | - | 3 | 2 |
| **C208.4** | 3 | 3 | 2 | 2 | 2 | 2 | - | - | - | - | - | - | 2 | - |
| **C208.5** | 3 | 3 | 2 | 2 | 2 | 2 | - | - | - | - | 3 | - | 2 | 2 |
| **C208** | 3 | 3 | 2 | 2 | 2 | 2 | - | 2 | - | - | 3 | - | 2 | 2 |

**SEMSTER-IV**

**Course Name: C209 (MA6453/Probability and Queuing theory)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C209.1** | Explaining the techniques of developing discrete & continuous probability distributions and its applications |
| **C209.2** | Developing the random experiments specified by two random variables and studies the Distribution of them. |
| **C209.3** | Testing for the the knowledge in the application of family of random variables in real life situations. |
| **C209.4** | Determining the knowledge and understand the various queuing models. |
| **C209.5** | Formulating the concrete problems using queuing theoretical approaches. |

**CO-PO-PSO CORRELATION LEVEL MATRIX:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C209.1** | 3 | 3 | - | 2 | - | - | - | - | - | - | - | 2 | 2 | - |
| **C209.2** | 3 | 3 | - | 2 | - | - | - | - | - | - | - | 2 | 2 | - |
| **C209.3** | 3 | 3 | - | 2 | - | - | - | - | - | - | - | 2 | 2 | - |
| **C209.4** | 3 | 3 | - | 2 | - | - | - | - | - | - | - | 2 | 2 | - |
| **C209.5** | 3 | 3 | - | 2 | - | - | - | - | - | - | - | 2 | 2 | - |
| **C209** | 3 | 3 | - | 2 | - | - | - | - | - | - | - | 2 | 2 | - |

**Course Name: C210 (CS6551/Computer Networks)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C210.1** | Explain the OSI layer concepts and physical layer functionalities in detail. |
| **C210.2** | Explain the Layer 2 environment and devices required to built different networks |
| **C210.3** | Discuss the routing protocols concepts which works on layer 3 in OSI |
| **C210.4** | Explain the operation and functionalities of Layer 4 transport layer in OSI |
| **C210.5** | Discuss about all three layers and related algorithms to application layer in OSI. |

**CO-PO-PSO CORRELATION LEVEL MATRIX:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C210.1** | 3 | - | - | - | - | 1 | 3 | 1 | 2 | 1 | - | 3 | 1 | 2 |
| **C210.2** | 3 | 2 | 2 |  | - | 1 | 3 | 2 | 2 | 1 | - | 3 | 1 | 2 |
| **C210.3** | 3 | 3 | 2 | 3 | - | 1 | 3 | 2 | 2 | 1 | - | 3 | 3 | 2 |
| **C210.4** | 3 | 2 | 2 | 3 | - | 1 | 3 | 2 | 2 | 1 | - | 3 | 3 | 2 |
| **C210.5** | 3 | 3 | 2 | 3 | - | 1 | 3 | 3 | 2 | 3 | - | 3 | 3 | 2 |
| **C210** | 3 | 3 | 2 | 3 | - | 1 | 3 | 2 | 2 | 1 | - | 3 | 3 | 2 |

**Course Name: C211 (CS6401/Operating Systems)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C211.1** | Explain the basic concepts and functions of Operating Systems |
| **C211.2** | Outline various threading models, process synchronization and deadlocks |
| **C211.3** | Compare the performance of various CPU scheduling algorithms |
| **C211.4** | Compare and contrast various memory management schemes |
| **C211.5** | Explain I/O management and file systems |
| **C211.6** | Model Linux multifunction server and utilize local network services |

**CO-PO-PSO CORRELATION LEVEL MATRIX:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C211.1** | 3 | 3 | 1 | - | 1 | - | - | - | - | - | - | 1 | 3 | 1 |
| **C211.2** | 3 | 3 | 3 | 2 | 2 | - | - | - | - | - | - | 1 | 3 | 2 |
| **C211.3** | 3 | 3 | 2 | 2 | 2 | - | - | - | - | - | - | 1 | 3 | 2 |
| **C211.4** | 3 | 3 | 3 | 2 | 2 | - | - | - | - | - | - | 1 | 3 | 2 |
| **C211.5** | 3 | 3 | 3 | 2 | 2 | - | - | - | - | - | - | 1 | 3 | 2 |
| **C211.6** | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 1 | 1 | 2 | 2 | 3 | 3 |
| **C211** | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 2 | 1 | 3 | 2 |

**Course Name: C212 (CS6402/ Design and Analysis of Algorithm)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C212.1** | Design and analyze the complexity of algorithms. |
| **C212.2** | Critically analyze the brute-force and divide & conquer algorithm design  Techniques for a given problem. |
| **C212.3** | Analyze and apply the dynamic programming and greedy algorithm design  Techniques for a given problem. |
| **C212.4** | Understand and apply the iterative design techniques for a given problem |
| **C212.5** | Analyze the limitations of algorithm and apply backtracking branch & bound design techniques for a given problem |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C212.1** | 3 | 2 | 2 | 1 | - | - | - | - | - | - | - | 2 | 1 | - |
| **C212.2** | 3 | 2 | 2 | 1 | - | - | - | - | - | - | - | 2 | 3 | 2 |
| **C212.3** | 3 | 2 | 2 | 1 | - | - | - | - | - | - | - | 2 | 3 | 2 |
| **C212.4** | 3 | 1 | - | - | - | - | - | - | - | - | - | 3 | 2 | 2 |
| **C212.5** | 3 | 3 | 3 | 2 | - | - | - | - | - | - | - | 3 | 2 | 2 |
| **C212** | 3 | 2 | 2 | 1 | - | - | - | - | - | - | - | 2 | 2 | 2 |

**Course Name: C213 (EC6504/Microprocessor and Microcontroller)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C213.1** | Apply a basic concept of 8086 microprocessor and its instruction set. |
| **C213.2** | Identify a detailed software and hardware structure of the microprocessor. |
| **C213.3** | Illustrate how the different peripherals are interfaced with microprocessor. |
| **C213.4** | Impart the knowledge about 8051 microcontroller. |
| **C213.5** | Develop the skills in simple program writing for 8051 and 8086 with interfacing. |

**CO-PO-PSO CORRELATION LEVEL MATRIX:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C213.1** | 3 | 3 | 3 | 2 | 1 | - | - | - | - | 2 | - | 2 | 3 | 2 |
| **C213.2** | 3 | 3 | 3 | 2 | 1 | - | - | - | - | 2 | - | 2 | 3 | 2 |
| **C213.3** | 3 | 3 | 3 | 2 | 1 | - | - | - | - | 2 | - | 2 | 3 | 2 |
| **C213.4** | 3 | 3 | 3 | 2 | 1 | - | - | - | - | 2 | - | 2 | 3 | 2 |
| **C213.5** | 3 | 3 | 3 | 2 | 1 | - | - | - | - | 2 | - | 2 | 3 | 2 |
| **C213** | 3 | 3 | 3 | 2 | 1 | - | - | - | - | 2 | - | 2 | 3 | 2 |

**Course Name: C214 (CS6403/ SOFTWARE ENGINEERING)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C214.1** | Explain the software engineering process and project management |
| **C214.2** | Demonstrate software requirements and analysis |
| **C214.3** | Able to understand and design architecture of software. |
| **C214.4** | Understanding software testing and implementation practices. |
| **C214.5** | Discuss about the software integration and project management |

**CO-PO-PSO CORRELATION LEVEL MATRIX:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C214.1** | 3 | 3 | 1 | 1 | - | - | - | - | - | 1 | 2 | 1 | 3 | 2 |
| **C214.2** | 3 | 3 | 2 | 1 | - | - | - | - | - | 1 | - | - | 1 | 2 |
| **C214.3** | 3 | 3 | 3 | 1 | 3 | - | - | - | - | 2 | 2 | - | 2 | 3 |
| **C214.4** | 3 | 3 | 3 | 3 | 3 | - | - | - | - | 2 | 1 | - | 3 | 2 |
| **C214.5** | 3 | 3 | 2 | 1 | - | - | - | - | - | 2 | 2 | 2 | 2 | 3 |
| **C214** | 3 | 3 | 2 | 1 | 3 | - | - | - | - | 2 | 2 | 2 | 2 | 2 |

**Course Name: C215 (CS6411/ Networks Laboratory)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C215.1** | Demonstrate the Use simulation tools |
| **C215.2** | Demonstrate the socket program using TCP & UDP |
| **C215.3** | Develop simple applications using TCP & UDP |
| **C215.4** | Implement the various protocols. |
| **C215.5** | Analyze various routing algorithms |

**CO-PO-PSO CORRELATION LEVEL MATRIX:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C215.1** | 3 | 3 | 3 | 3 | 3 | 1 | - | - | - | - | 3 | 3 | 1 | 2 |
| **C215.2** | 3 | 3 | 3 | 3 | 3 | 1 | - | - | - | - | 3 | 3 | 1 | 2 |
| **C215.3** | 3 | 3 | 3 | 3 | 3 | 1 | - | - | - | - | 3 | 3 | 3 | 2 |
| **C215.4** | 3 | 3 | 3 | 3 | 3 | 1 | - | - | - | - | 3 | 3 | 3 | 2 |
| **C215.5** | 3 | 3 | 3 | 3 | 3 | 1 | 1 | 1 | 2 | 2 | 3 | 3 | 3 | 2 |
| **C215** | 3 | 3 | 3 | 3 | 3 | 1 | 1 | 1 | 2 | 2 | 3 | 3 | 3 | 2 |

**Course Name: C216 (CS6412/Microprocessor and Microcontroller Laboratory)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C216.1** | Design And Implement Programs On 8086 Microprocessor. |
| **C216.2** | Design interfacing circuits with 8086 |
| **C216.3** | Design and implement 8051 microcontroller based systems. |
| **C216.4** | Model serial and parallel interfacing of 8086 microprocessor |
| **C216.5** | Develop assembly language programs for various applications using 8051 microcontrollers. |

**CO-PO-PSO CORRELATION LEVEL MATRIX:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C216.1** | 3 | 3 | 3 | 2 | 1 | - | - | - | - | 2 | - | 2 | 1 | 1 |
| **C216.2** | 3 | 3 | 3 | 2 | 1 | - | - | - | - | 2 | - | 2 | 1 | 1 |
| **C216.3** | 3 | 3 | 3 | 2 | 1 | - | - | - | - | 2 | - | 2 | 1 | 1 |
| **C216.4** | 3 | 3 | 3 | 2 | 1 | - | - | - | - | 2 | - | 2 | 1 | 1 |
| **C216.5** | 3 | 3 | 3 | 2 | 1 | - | - | - | - | 2 | - | 2 | 1 | 1 |
| **C216** | 3 | 3 | 3 | 2 | 1 | - | - | - | - | 2 | - | 2 | 1 | 1 |

**Course Name: C217 (CS6413/Operating Systems Laboratory)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C217.1** | Experiment with Unix commands and shell programming |
| **C217.2** | Build ‘C’ program for process and file system management using system calls |
| **C217.3** | Choose the best CPU scheduling algorithm for a given problem instance |
| **C217.4** | Identify the performance of various page replacement algorithms |
| **C217.5** | Develop algorithm for deadlock avoidance, detection and file allocation strategies |

**CO-PO-PSO CORRELATION LEVEL MATRIX:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C217.1** | 3 | 3 | 1 | - | 1 | - | - | - | - | - | - | 1 | 3 | 1 |
| **C217.2** | 3 | 3 | 3 | 2 | 1 | 1 | - | - | - | - | 1 | 2 | 3 | 2 |
| **C217.3** | 3 | 3 | 3 | 3 | 1 | 2 | - | - | - | - | 2 | 2 | 3 | 3 |
| **C217.4** | 3 | 3 | 3 | 2 | 1 | - | - | - | 2 | - | 1 | 2 | 3 | 2 |
| **C217.5** | 3 | 3 | 3 | 2 | 1 | - | 1 | 2 | 2 | - | 1 | 1 | 3 | 2 |
| **C217** | 3 | 3 | 3 | 2 | 1 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 3 | 2 |

**SEMSTER-V**

**Course Name: C301 (MA6566/Discrete Mathematics)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C301.1** | Summarizing the logic and mathematical reasoning to count or enumerate objects in systematic way. |
| **C301.2** | Applying the generating functions to solve a variety of combinatorial problems. |
| **C301.3** | Examine the knowledge of graph theory to solve real world problems |
| **C301.4** | Evaluating the concepts and properties of algebraic structures such as semi groups, monodies and groups. |
| **C301.5** | Solving the concept of lattices and Boolean algebra. |

**CO-PO-PSO CORRELATION LEVEL MATRIX:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C301.1** | 3 | 3 | - | 2 | - | - | - | - | - | - | - | 2 | 2 | - |
| **C301.2** | 3 | 3 | - | 2 | - | - | - | - | - | - | - | 2 | 2 | - |
| **C301.3** | 3 | 3 | - | 2 | - | - | - | - | - | - | - | 2 | 2 | - |
| **C301.4** | 3 | 3 | - | 2 | - | - | - | - | - | - | - | 2 | 2 | - |
| **C301.5** | 3 | 3 | - | 2 | - | - | - | - | - | - | - | 2 | 2 | - |
| **C301** | 3 | 3 | - | 2 | - | - | - | - | - | - | - | 2 | 2 | - |

**Course Name: C302 (CS6501/ Internet Programming)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C302.1** | Explain the fundamentals of Java Programming |
| **C302.2** | Develop a basic website using HTML and Cascading style sheet. |
| **C302.3** | Compare and contrast the java script programming for client and server along with its event handling mechanism. |
| **C302.4** | Build a webpage in PHP with XML data format. |
| **C302.5** | Explain web services and client presentation using AJAX. |

**CO-PO-PSO CORRELATION LEVEL MATRIX:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C302.1** | 3 | 2 | 3 | 1 | - | - | - | - | - | - | - | 1 | 3 | 2 |
| **C302.2** | 3 | 2 | 3 | 2 | - | - | - | - | - | - | - | 1 | 1 | 2 |
| **C302.3** | 3 | 2 | 3 | 2 | - | - | - | - | - | - | - | 1 | 3 | 2 |
| **C302.4** | 3 | 1 | - | - | - | - | - | - | - | - | - | - | 2 | 2 |
| **C302.5** | 3 | 3 | 3 | 2 | - | - | - | - | - | - | - | 1 | 3 | 3 |
| **C302** | 3 | 2 | 3 | 2 | - | - | - | - | - | - | - | 1 | 2 | 2 |

**Course Name: C303 (CS6502/Object Oriented Analysis and Design)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C303.1** | Understand the basics of OO analysis and design skills |
| **C303.2** | Understand design patterns. |
| **C303.3** | Develop use case and class diagrams |
| **C303.4** | Develop sequence diagram, package diagram by applying design patterns |
| **C303.5** | Understand to create code from design and perform object oriented testing. |

**CO-PO-PSO CORRELATION LEVEL MATRIX:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C303.1** | 3 | - | - | - | - | 1 | 3 | 1 | 2 | 1 | - | 3 | 3 | 2 |
| **C303.2** | 3 | 2 | 2 | - | - | 1 | 3 | 2 | 2 | 1 | - | 3 | 2 | 3 |
| **C303.3** | 3 | 3 | 2 | 3 | - | 1 | 3 | 2 | 2 | 1 | - | 3 | 1 | 2 |
| **C303.4** | 3 | 2 | 2 | 3 | - | 1 | 3 | 2 | 2 | 1 | - | 3 | 2 | 3 |
| **C303.5** | 3 | 3 | 2 | 3 | - | 1 | 3 | 3 | 2 | 3 | - | 3 | 2 | 2 |
| **C303** | 3 | 3 | 2 | 3 | - | 1 | 3 | 2 | 2 | 1 | - | 3 | 2 | 2 |

**Course Name: C304 (CS6503/Theory of Computation)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C304.1** | Model, compare and analyze different computational models using combinatorial methods |
| **C304.2** | Apply rigorously formal mathematical methods to prove properties of languages, grammars and automata. |
| **C304.3** | Construct algorithms for different problems and argue formally about correctness on different restricted machine models of computation. |
| **C304.4** | Identify limitations of some computational models and possible methods of proving them. |
| **C304.5** | Have an overview of how the theoretical study in this course is applicable to and engineering application like designing the compilers. |

**CO-PO-PSO CORRELATION LEVEL MATRIX:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C304.1** | 3 | 3 | 2 | 2 | 2 | - | 2 | - | - | 2 | - | 2 | 3 | - |
| **C304.2** | 3 | 3 | 2 | 2 | 2 | - | 2 | - | - | 2 | - | 2 | 3 | - |
| **C304.3** | 3 | 3 | 2 | 2 | 2 | - | 2 | - | - | 2 | - | 2 | 3 | - |
| **C304.4** | 3 | 3 | 2 | 2 | 2 | - | 2 | - | - | 2 | - | 2 | 3 | - |
| **C304.5** | 3 | 3 | 2 | 2 | 2 | - | 2 | - | - | 2 | - | 2 | 3 | - |
| **C304** | 3 | 3 | 2 | 2 | 2 | - | 2 | - | - | 2 | - | 2 | 3 | - |

**Course Name: C305 (CS6504/Computer Graphics)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C305.1** | Explain the various output primitives and graphics systems. |
| **C305.2** | Discuss various 2D transformations, viewing and clipping techniques. |
| **C305.3** | Explain the 3D objects and projections. |
| **C305.4** | Explain basic illumination and color models. |
| **C305.5** | Discuss various animation sequences and graphics realism. |

**CO-PO-PSO CORRELATION LEVEL MATRIX:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C305.1** | 3 | 3 | 3 | 2 | 1 | 2 | - | - | - | - | 2 | - | 2 | 3 |
| **C305.2** | 3 | 3 | 3 | 2 | 2 | 2 | - | - | - | - | 1 | - | 1 | 2 |
| **C305.3** | 3 | 3 | 3 | 2 | 2 | 2 | - | - | - | - | 1 | - | 3 | 2 |
| **C305.4** | 3 | 3 | 3 | 2 | 2 | 2 | - | - | 2 | 2 | 2 | - | 2 | 2 |
| **C305.5** | 3 | 3 | 3 | 2 | 2 | 2 | - | - | 2 | 2 | 2 | 1 | 3 | 2 |
| **C305** | 3 | 3 | 3 | 2 | 2 | 2 | - | - | 2 | 2 | 2 | 1 | 2 | 2 |

**Course Name: C306 (CS6511/Case Tools Laboratory)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C306.1** | Outline the problem statement for a given problem |
| **C306.2** | Construct use case model, identify the classes and functionality of the system |
| **C306.3** | Show the objects interaction for all the system functionality |
| **C306.4** | Develop code from system design |
| **C306.5** | Examine the developed code using testing strategies. |

**CO-PO-PSO CORRELATION LEVEL MATRIX:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C306.1** | 3 | 3 | 2 | 2 | 2 | - | - | - | - | - | - | 1 | 2 | 3 |
| **C306.2** | 3 | 3 | 1 | 1 | 3 | - | - | - | - | - | - | 3 | 2 | 3 |
| **C306.3** | 3 | 2 | 2 | 1 | 3 | - | - | - | - | - | - | 2 | 2 | 3 |
| **C306.4** | 3 | 3 | 2 | 2 | 3 | 2 | 1 | 3 | 3 | 1 | 1 | 3 | 2 | 3 |
| **C306.5** | 3 | 3 | 2 | 1 | 3 | 2 | 2 | 3 | 2 | 3 | 2 | 3 | 2 | 3 |
| **C306** | 3 | 3 | 2 | 1 | 3 | 2 | 2 | 3 | 3 | 2 | 2 | 2 | 2 | 3 |

**Course Name: C307 (CS6512/Internet Programming Laboratory )**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C307.1** | Design web pages using html/xml and style sheets |
| **C307.2** | Create user interfaces using java frames and applets. |
| **C307.3** | Develop dynamic web pages using server side scripting |
| **C307.4** | Execute client server applications |
| **C307.5** | Create applications with Ajax |

**CO-PO-PSO CORRELATION LEVEL MATRIX**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C307.1** | 3 | 1 | 2 | - | 2 | - | - | - | - | - | - | 3 | 3 | 3 |
| **C307.2** | 2 | 3 | 3 | - | 3 | - | - | - | - | - | - | 2 | 1 | 2 |
| **C307.3** | 2 | 3 | 3 | - | 2 | - | - | - | - | - | - | 2 | 3 | 2 |
| **C307.4** | 2 | 3 | 3 | - | 3 | - | - | - | - | - | - | 2 | 2 | 2 |
| **C307.5** | 2 | 2 | 2 | - | 2 | - | - | - | - | - | - | 2 | 3 | 3 |
| **C307** | 2 | 2 | 3 | - | 2 | - | - | - | - | - | - | 2 | 2 | 2 |

**Course Name: C308 (CS6513/ Computer Graphics Laboratory)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C308.1** | Create 2D graphical objects (Line and Circle) using DDA and Bresenham algorithm |
| **C308.2** | Create 2D Geometric transformations |
| **C308.3** | Create Composite 2D Transformations |
| **C308.4** | Implement Line clipping algorithms |
| **C308.5** | Create 3D transformations and projections |
| **C308.6** | Implement image manipulation and enhancement |
| **C308** | Create 2D animations using tools |

**CO-PO-PSO CORRELATION LEVEL MATRIX**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C308.1** | 2 | 3 | 3 | 2 | 1 | 1 | - | - | 2 | 2 | 2 | 1 | 3 | 3 |
| **C308.2** | 1 | 2 | 3 | 3 | 2 | 1 | - | - | 2 | 2 | 1 | - | 2 | 3 |
| **C308.3** | 3 | 2 | 3 | 2 | 3 | - | - | - | 3 | 2 | 2 | - | 2 | 3 |
| **C308.4** | 3 | 3 | 3 | 2 | 3 | - | - | - | 2 | 1 | 2 | - | 3 | 3 |
| **C308.5** | 2 | 2 | 2 | 3 | 1 | - | - | - | 3 | - | - | 2 | 2 | 1 |
| **C308.6** | 3 | 3 | 3 | 2 | 3 | - | - | - | - | - | 1 | 1 | 2 | 3 |
| **C308** | 2 | 3 | 3 | 2 | 2 | 1 | - | - | 2 | 2 | 2 | 1 | 2 | 3 |

**SEMSTER-VI**

**Course Name: C309( CS6601/ Distributed Systems)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C309.1** | Explain the distributed systems architecture. |
| **C309.2** | Outline the inter process communication in distributed systems |
| **C309.3** | Discuss the file accessing model and various services in distributed system |
| **C309.4** | Explain concurrency control and properties of transaction in Distributed systems. |
| **C309.5** | Discuss and explain resource sharing and process management in distributed system |

**CO-PO-PSO CORRELATION LEVEL MATRIX**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C309.1** | 3 | 1 | 2 | - | - | 1 | - | - | 2 | 1 | - | - | 3 | 2 |
| **C309.2** | 3 | 1 | 1 | - | - | - | - | - | 2 | 2 | - | - | 1 | 2 |
| **C309.3** | 3 | 3 | 3 | 2 | - | - | - | - | 2 | 2 | - | - | 2 | 3 |
| **C309.4** | 3 | 1 | 3 | - | - | 1 | 1 | - | 2 | 3 | - | - | 3 | 2 |
| **C309.5** | 3 | 2 | 2 | 3 | - | 1 | 1 | 3 | 2 | 3 | - | 3 | 2 | 3 |
| **C309** | 3 | 2 | 2 | 3 | - | 1 | 1 | 3 | 2 | 2 | - | 3 | 2 | 2 |

**Course Name: C310 (IT6601/ Mobile Computing )**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C310.1** | Explain the basics of mobile Computing |
| **C310.2** | Describe the functionality of Mobile IP and Transport Layer |
| **C310.3** | Classify different types of mobile telecommunication systems |
| **C310.4** | Demonstrate the Adhoc networks concepts and its routing protocols |
| **C310.5** | Make use of mobile operating systems in developing mobile applications |

**CO-PO- PSO CORRELATION LEVEL MATRIX**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C310.1** | 3 | 3 | 2 | 2 | - | - | - | - | - | - | - | - | 3 | - |
| **C310.2** | 3 | 3 | 2 | 2 | - | - | - | - | - | - | - | - | 2 | 1 |
| **C310.3** | 3 | 2 | 2 | 2 | - | - | - | - | - | - | - | - | 3 | 1 |
| **C310.4** | 3 | 3 | 3 | 3 | 2 | - | - | - | - | - | - | - | 3 | 3 |
| **C310.5** | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 3 | 3 | 3 | 3 |
| **C310** | 3 | 3 | 2 | 2 | 3 | 3 | 2 | 3 | 3 | 2 | 3 | 3 | 3 | 2 |

**Course Name: C311( CS6660/ Compiler Design)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C311.1** | Explain the phases of a Compiler |
| **C311.2** | Illustrate the translation of regular expression into parse tree using syntax analyzer |
| **C311.3** | Construct the intermediate representation considering the type systems |
| **C311.4** | Apply the optimization techniques for the generated code |
| **C311.5** | Use the different compiler construction tools to develop a simple compiler |

**CO-PO-PSO CORRELATION LEVEL MATRIX**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C311.1** | 3 | 2 | - | 2 | 1 | - | - | - | - | - | - | - | 3 | 1 |
| **C311.2** | 3 | 3 | 1 | 3 | 2 | - | - | - | - | - | - | - | 3 | 2 |
| **C311.3** | 3 | 3 | 1 | 3 | 2 | - | - | - | - | - | - | - | 3 | 2 |
| **C311.4** | 3 | 3 | 1 | 3 | 2 | 1 | 1 | - | - | - | - | - | 3 | 2 |
| **C311.5** | 1 | 3 | 2 | 2 | 3 | 1 | 1 | 1 | 2 | - | - | 1 | 1 | 2 |
| **C311** | 3 | 3 | 1 | 3 | 2 | 1 | 1 | 1 | 2 | - | - | 1 | 3 | 2 |

**Course Name: C312 (IT6502/Digital Signal Processing)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C312.1** | Understand the basic concepts of Signals and system |
| **C312.2** | Analyze the signals in time domain and frequency domain |
| **C312.3** | Design and realize the IIR filters |
| **C312.4** | Design and realize the FIR filters |
| **C312.5** | Understand and analyze the errors occurs in the conversion of analog to digital signals. |

**CO-PO-PSO CORRELATION LEVEL MATRIX**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C312.1** | 3 | 3 | 3 | 2 | 1 | - | - | - | - | 2 | - | 2 | 1 | - |
| **C312.2** | 3 | 3 | 3 | 2 | 1 | - | - | - | - | 2 | - | 2 | 1 | - |
| **C312.3** | 3 | 3 | 3 | 2 | 1 | - | - | - | - | 2 | - | 2 | 1 | - |
| **C312.4** | 3 | 3 | 3 | 2 | 1 | - | - | - | - | 2 | - | 2 | 1 | - |
| **C312.5** | 3 | 3 | 3 | 2 | 1 | - | - | - | - | 2 | - | 2 | 1 | - |
| **C312** | 3 | 3 | 3 | 2 | 1 | - | - | - | - | 2 | - | 2 | 1 | - |

**Course Name: C313 (CS6659/ Artificial Intelligence)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C313.1** | Identify problems that are amenable to solution by AI methods. |
| **C313.2** | Recognize appropriate AI methods to solve a given problem. |
| **C313.3** | Discuss a given problem in the language/framework of different AI methods. |
| **C313.4** | Develop basic AI algorithms. |
| **C313.5** | Model an empirical evaluation of different algorithms on a problem formalization |

**CO-PO-PSO CORRELATION LEVEL MATRIX**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C313.1** | 3 | 3 | 2 | 1 | - | - | - | - | - | - | - | - | 2 | 3 |
| **C313.2** | 3 | 3 | 2 | 1 | - | - | - | - | - | - | - | - | 1 | 2 |
| **C313.3** | 3 | 3 | 2 | 2 | - | 1 | 1 | 2 | - | - | - | - | 3 | 2 |
| **C313.4** | 3 | 3 | 3 | 3 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 2 | 2 | 2 |
| **C313.5** | 3 | 3 | 3 | 3 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 2 | 3 | 2 |
| **C313** | 3 | 3 | 2 | 2 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 2 | 2 | 2 |

**Course Name: C314B (GE6757/ Total Quality management)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C314B.1** | Outline the Dimensions and Barriers regarding with Quality. |
| **C314B.2** | Illustrate the TQM Principles |
| **C314B.3** | Demonstrate Tools utilization for Quality improvement. |
| **C314B.4** | Explain the various types of Techniques are used to measure Quality. |
| **C314B.5** | Apply various Quality Systems and Auditing on implementation of TQM |

**CO-PO-PSO CORRELATION LEVEL MATRIX**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C314B.1** | 3 | 3 | - | 2 | - | - | - | - | 3 | - | - | - | 3 | 3 |
| **C314B.2** | 3 | 2 | - | 2 | - | 3 | - | - | 3 | 2 | 3 | - | 3 | 3 |
| **C314B.3** | 3 | 3 | - | 3 | - | 2 | - | - | - | - | - | 3 | 3 | 2 |
| **C314B.4** | 3 | 3 | - | 3 | - | - | - | - | - | 2 | - | 3 | 3 | 3 |
| **C314B.5** | 3 | 3 | - | 3 | - | 3 | - | 2 | 3 | 3 | 3 | 3 | 3 | 2 |
| **C314B.1** | 3 | 3 | - | 3 | - | 3 | - | 2 | 3 | 2 | 3 | 3 | 3 | 3 |

**Course Name: C315 (CS6611/Mobile Application Development Laboratory)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C315.1** | Build a native application using GUI components and Mobile application development framework |
| **C315.2** | Develop an application using basic graphical primitives and databases |
| **C315.3** | Construct an application using multi threading and RSS feed |
| **C315.4** | Make use of location identification using GPS in an application |
| **C315.5** | Model new applications to hand held devices |

**CO-PO-PSO CORRELATION LEVEL MATRIX**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C315.1** | 3 | 3 | 3 | 3 | 3 | - | - | - | - | - | - | 2 | 3 | 3 |
| **C315.2** | 3 | 3 | 3 | 3 | 3 | - | - | - | - | - | - | 2 | 3 | 3 |
| **C315.3** | 3 | 3 | 3 | 3 | 3 | - | - | - | - | - | - | 2 | 3 | 2 |
| **C315.4** | 3 | 3 | 3 | 3 | 3 | 2 | - | - | - | - | - | 3 | 3 | 3 |
| **C315.5** | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 2 |
| **C315** | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 |

**Course Name: C316 (CS6612/Compiler Laboratory)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C316**.1 | Apply different compiler writing tools to implement the different Phases |
| **C316**.2 | Analyze the data flow and control flow |
| **C316**.3 | Construct the intermediate representation |
| **C316**.4 | Design the back end of a compiler for 8086 assembler |
| **C316**.5 | Compare various code optimization techniques |

**CO-PO-PSO CORRELATION LEVEL MATRIX**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C316.1** | 3 | 3 | 3 | 3 | 3 | 2 | 1 | - | - | - | - | 1 | 3 | 3 |
| **C316.2** | 3 | 3 | 3 | 3 | 2 | 1 | - | - | - | - | - | 1 | 3 | 3 |
| **C316.3** | 3 | 3 | 3 | 3 | 2 | 1 | - | - | - | - | - | 1 | 3 | 3 |
| **C316.4** | 3 | 3 | 3 | 3 | 3 | 1 | - | - | 1 | - | - | 1 | 3 | 3 |
| **C316.5** | 3 | 3 | 3 | 3 | 2 | 1 | 1 | - | - | - | - | 1 | 3 | 3 |
| **C316** | 3 | 3 | 3 | 3 | 2 | 1 | 1 | - | 1 | - | - | 1 | 3 | 3 |

**Course Name: C317 (GE6674/ Communication and Soft skills Laboratory)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C317.1** | Develop Listening and speaking skills. |
| **C317.2** | Writing job applications – cover letter – resume – emails – letters – memos – reports – blogs – writing for publications |
| **C317.3** | One can Write international examination such as IELTS and TOEFL |
| **C317.4** | Make presentations and Participate in Group Discussions. |
| **C317.5** | Creative and critical thinking for attend an interview successfully. |

**CO-PO-PSO CORRELATION LEVEL MATRIX**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C317.1** | 3 | 1 | - | 1 | - | 2 | 1 | 1 | 2 | 3 | - | 3 | **-** | **-** |
| **C317.2** | - | - | 1 | - | - | 3 | 2 | 1 | 2 | 1 | - | - | **-** | **-** |
| **C317.3** | - | 1 | - | - | - | 1 | - | - | - | 2 | - | 3 | **-** | **-** |
| **C317.4** | 2 | 1 | - | - | - | 1 | - | - | - | 3 | - | 2 | 1 | - |
| **C317.5** | 2 | 1 | - | - | - | 1 | - | 2 | 3 | 3 | - | - | - | - |
| **C317** | 2 | 1 | 1 | 1 | - | 2 | 2 | 1 | 2 | 2 | - | 3 | 1 | - |

**SEMSTER VII**

**Course Name: C401 (CS6701/Cryptography and Network Security)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C401.1** | Understand the basic concept of OSI layer model and Number theory concepts |
| **C401.2** | Able to work on different types of public key algorithms and encryption techniques |
| **C401.3** | Acquire knowledge on hashing functions and digital signatures. |
| **C401.4** | Explain and analyze Firewall principles and intrusion design techniques... |
| **C401.5** | Evaluate about Email and IP security policies. |

**CO-PO-PSO CORRELATION LEVEL MATRIX**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C401.1** | 3 | 3 | 2 | 2 | 1 | - | - | - | - | - | - | - | 3 | 3 |
| **C401.2** | 3 | 3 | 2 | 2 | 1 | - | - | - | - | - | - | - | 2 | 2 |
| **C401.3** | 3 | 3 | 3 | 2 | 2 | - | - | - | - | - | - | - | 2 | 2 |
| **C401.4** | 3 | 3 | 3 | 3 | 2 | - | - | - | - | - | 2 | 2 | 1 | 1 |
| **C401.5** | 3 | 3 | 3 | 2 | 2 | - | 2 | - | - | - | 1 | 2 | 2 | 2 |
| **C401** | 3 | 3 | 3 | 2 | 2 | - | 2 | - | - | - | 2 | 2 | 2 | 2 |

**Course Name: C402 (CS6702/ Graph Theory And Applications)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C402.1** | Recall precise and accurate mathematical definitions of objects in graph theory. |
| **C402.2** | Illustrate fundamentals of circuits, cut sets, network flows & graph. |
| **C402.3** | Make use of chromatic polynomial and Solve Four color problem |
| **C402.4** | Distinguish Permutations and Combinations and prove principle of inclusion and exclusion |
| **C402.5** | Develop generating functions and solve homogeneous and non-homogeneous recurrence relations. |

**CO-PO-PSO CORRELATION LEVEL MATRIX**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C402.1** | 3 | 3 | 3 | 2 | - | - | - | - | - | - | - | - | 2 | 2 |
| **C402.2** | 3 | 3 | 2 | 2 | - | - | - | - | - | - | - | - | 2 | 2 |
| **C402.3** | 3 | 3 | 2 | 2 | - | - | - | - | - | - | - | - | 1 | 2 |
| **C402.4** | 3 | 3 | 2 | 2 | - | - | - | - | - | - | - | - | 2 | 2 |
| **C402.5** | 3 | 3 | 3 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 2 | 2 |
| **C402** | 3 | 3 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 2 | 2 |

**Course Name: C403 (CS6703/Grid and Cloud computing)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C403.1** | Explain the evolution of distributed computing towards grid computing |
| **C403.2** | Used to understand data intensive grid service models and grid computing techniques |
| **C403.3** | Discuss the virtualization concept in cloud computing. |
| **C403.4** | Experiment with the programming model for Hadoop, VMWARE and Globus toolkit. |
| **C403.5** | Analyze the various security issues in grid and cloud environment. |

**CO-PO-PSO CORRELATION LEVEL MATRIX**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C403.1** | 3 | 3 | 3 | - | - | - | - | - | - | 1 | - | - | 2 | 2 |
| **C403.2** | 3 | 3 | 3 | - | - | - | - | - | - | 2 | - | - | 1 | 2 |
| **C403.3** | 3 | 3 | 3 | - | 3 | - | - | - | - | 2 | 1 | 3 | 2 | 1 |
| **C403.4** | 3 | 3 | 3 | 3 | 3 | 3 | 1 | - | 2 | 3 | 1 | 3 | 2 | 2 |
| **C403.5** | 3 | 3 | 3 | 3 | 3 | - | 1 | 3 | 2 | 3 | 1 | 3 | 3 | 2 |
| **C403** | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 3 | 2 | 2 | 1 | 3 | 2 | 2 |

**Course Name: C404 (CS6704/ Resource Management Techniques)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C404.1** | Make use of simplex method to solve optimization problems. |
| **C404.2** | Demonstrate the concept of duality to solve Shortest route problem |
| **C404.3** | Explain integer programming method. |
| **C404.4** | Demonstrate the types of constraints and optimization methods. |
| **C404.5** | Utilize PERT and CPM in project management. |

**CO-PO-PSO CORRELATION LEVEL MATRIX**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C404.1** | 3 | 3 | 3 | 3 | - | 2 | 2 | 1 | 1 | 1 | 1 | 3 | `2 | 1 |
| **C404.2** | 3 | 3 | 3 | 3 | 1 | 2 | - | - | - | - | - | - | 2 | 1 |
| **C404.3** | 3 | 3 | 3 | 2 | - | 3 | - | - | - | - | - | 1 | 1 | 2 |
| **C404.4** | 3 | 3 | - | 2 | - | 1 | - | - | - | - | - | 1 | 1 | 2 |
| **C404.5** | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 2 | 3 | 3 | 2 | 1 |
| **C404** | 3 | 3 | 3 | 3 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 1 |

**Course Name: C405A (CS6003/Ad-hoc and Sensor Networks)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C405A.1** | Explain the basic concepts of WIRELESS networks and challenges of adhoc and sensor networks |
| **C405A.2** | Classify the design issues and different categories of MAC protocols |
| **C405A.3** | Explain the various adhoc routing protocols and transport layer mechanisms |
| **C405A.4** | Discuss the sensor characteristics and wsn layer protocols |
| **C405A.5** | Illustrate the issues of routing in wsn and QoS related performance measurements |

**CO-PO-PSO CORRELATION LEVEL MATRIX**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C405A.1** | 3 | 2 | - | 1 | - | - | - | - | - | - | - | 2 | 2 | 3 |
| **C405A.2** | 3 | 3 | 2 | 1 | - | - | - | - | - | - | - | 2 | 2 | 3 |
| **C405A.3** | 3 | 3 | 2 | 1 | 1 | - | - | - | - | - | - | 2 | 2 | 3 |
| **C405A.4** | 3 | 2 | - | 1 | 1 | - | - | - | - | - | - | 2 | 2 | 3 |
| **C405A.5** | 3 | 3 | 2 | 1 | 1 | 3 | 1 | - | - | - | - | 3 | 2 | 3 |
| **C405A** | 3 | 3 | 2 | 1 | 1 | 3 | 1 | - | - | - | - | 2 | 2 | 3 |

**Course Name: C406D (CS6007/Information Retrieval)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C406D.1** | Understand about the IR components and Web Search Engine Framework |
| **C406D.2** | Analyze various information retrieval models |
| **C406D.3** | Explain the Search Engine Optimization and Web Crawler |
| **C406D.4** | Discuss about Web Link Analysis algorithms and advanced search |
| **C406D.5** | Demonstrate text mining techniques with machine learning algorithms |

**CO-PO-PSO CORRELATION LEVEL MATRIX**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C406D.1** | 3 | 2 | 2 | 2 | 2 | - | - | - | 2 | - | - | 1 | 2 | 2 |
| **C406D.2** | 3 | 2 | 3 | 2 | 2 | 1 | - | - | 3 | - | - | - | 3 | 2 |
| **C406D.3** | 3 | 2 | 3 | 2 | 3 | 1 | - | - | 3 | - | - | 1 | 3 | 3 |
| **C406D.4** | 3 | 3 | 3 | 3 | 3 | 2 | - | - | 3 | - | - | 1 | 3 | 3 |
| **C406D.5** | 3 | 3 | 3 | 3 | 3 | 2 | - | 1 | 3 | - | 2 | 2 | 3 | 3 |
| **C406D** | 3 | 2 | 3 | 2 | 3 | 2 | - | 1 | 3 | - | 2 | 1 | 3 | 3 |

**Course Name: C407 (CS6711/Security Laboratory)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C407.1** | Apply the cryptographic algorithms for data communication |
| **C407.2** | Compare the performance of various security algorithms |
| **C407.3** | Apply the Digital signature for secure data transmission |
| **C407.4** | Utilize the different open source tools for network security and analysis |
| **C407.5** | Demonstrate intrusion detection system using network security tool. |

**CO-PO-PSO CORRELATION LEVEL MATRIX**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C407.1** | 3 | 3 | 3 | 2 | 2 | 2 | - | - | 2 | 2 | - | 3 | 3 | 2 |
| **C407.2** | 3 | 3 | 3 | 3 | 2 | 3 | - | - | 2 | 2 | - | 3 | 3 | 3 |
| **C407.3** | 3 | 3 | 3 | 3 | 2 | 3 | - | - | 2 | 2 | - | 3 | 3 | 3 |
| **C407.4** | 3 | 3 | 3 | 3 | 3 | 3 | - | - | 3 | 2 | - | 3 | 3 | 3 |
| **C407.5** | 3 | 3 | 2 | 1 | 3 | 3 | - | - | 2 | 1 | - | 3 | 3 | 2 |
| **C407** | 3 | 3 | 3 | 2 | 2 | 3 | - | - | 2 | 2 | - | 3 | 3 | 3 |

**Course Name: C408 (CS6712/Grid and Cloud computing Laboratory)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C408.1** | Demonstrate the Use simulation tools globus tool, open nebula and eucalyptus |
| **C408.2** | Use the grid and cloud tool kits. |
| **C408.3** | Design and implement applications on the Grid. |
| **C408.4** | Design and Implement applications on the Cloud. |
| **C408.5** | Design and implement Virtual machines of different configuration and Demonstrate to use Hadoop |

**CO-PO-PSO CORRELATION LEVEL MATRIX**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C408.1** | 3 | 3 | 3 | 3 | 3 | 1 | - | - | - | - | - | 3 | 3 | 2 |
| **C408.2** | 3 | 3 | 3 | 3 | 3 | 1 | - | - | - | - | - | 3 | 3 | 2 |
| **C408.3** | 3 | 3 | 3 | 3 | 3 | 1 | - | - | - | - | - | 3 | 3 | 2 |
| **C408.4** | 3 | 3 | 3 | 3 | 3 | 1 | - | - | - | - | - | 3 | 3 | 2 |
| **C408.5** | 3 | 3 | 3 | 3 | 3 | 1 | 1 | 1 | 2 | 2 | 3 | 3 | 3 | 2 |
| **C408** | 3 | 3 | 3 | 3 | 3 | 1 | 1 | 1 | 2 | 2 | 3 | 3 | 3 | 2 |

**SEMSTER-VIII**

**Course Name: C409 (CS6801/Multi-core Architectures and Programming)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C409.1** | Understand the various processor and multithreaded programming |
| **C409.2** | Illustrate the concept of parallel programming and deadlocks |
| **C409.3** | Design and develop the shared memory program using OpenMP |
| **C409.4** | Realize the Distributed memory program using MPI |
| **C409.5** | Evaluate the performance of OpenMP and MPI using case studies |

**CO-PO-PSO CORRELATION LEVEL MATRIX**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C409.1** | 3 | 1 | 3 | 2 | - | - | - | - | - | - | - | - | 2 | 3 |
| **C409.2** | 3 | 3 | 3 | 2 | - | - | - | - | - | - | - | - | 1 | 2 |
| **C409.3** | 2 | 3 | 3 | 2 | - | 1 | 1 | 2 | - | - | - | - | 3 | 2 |
| **C409.4** | 2 | 2 | 3 | 3 | 2 | 1 | 1 | 2 | 2 | 1 | - | 2 | 2 | 2 |
| **C409.5** | 2 | 2 | 3 | 3 | 2 | 1 | 1 | 2 | 2 | 1 | - | 2 | 3 | 2 |
| **C409** | 2 | 2 | 3 | 2 | 2 | 1 | 1 | 2 | 2 | 1 | - | 2 | 2 | 2 |

**Course Name: C410C (IT6011 - Knowledge Management)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C410C.1** | Understand the foundations of knowledge management |
| **C410C.2** | Create the culture of learning and knowledge sharing in an organization |
| **C410C.3** | Analyze how to use the knowledge management tools |
| **C410C.4** | Develop knowledge management Applications |
| **C410C.5** | Design and develop enterprise applications |

**CO-PO-PSO CORRELATION LEVEL MATRIX**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C410C.1** | 3 | 1 | 3 | 2 | - | - | - | - | - | - | - | - | 2 | 3 |
| **C410C.2** | 3 | 3 | 3 | 2 | - | - | - | - | - | - | - | - | 1 | 2 |
| **C410C.3** | 2 | 3 | 3 | 2 | - | 1 | 1 | 2 | - | - | - | - | 3 | 2 |
| **C410C.4** | 2 | 2 | 3 | 3 | 2 | 1 | 1 | 2 | 2 | 1 | - | 2 | 2 | 2 |
| **C410C.5** | 2 | 2 | 3 | 3 | 2 | 1 | 1 | 2 | 2 | 1 | - | 2 | 3 | 2 |
| **C410C.1** | 2 | 2 | 3 | 2 | 2 | 1 | 1 | 2 | 2 | 1 | - | 2 | 2 | 2 |

**Course Name: C411B (GE6075/Professional Ethics in Engineering)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C411B.1** | Tell about an awareness of human values to appreciate the rights of others and stress management |
| **C411B.2** | Illustrate the moral issues and models of professional roles |
| **C411B.3** | Identify the ethical issues related to engineering and realize the responsibilities and rights in the society |
| **C411B.4** | Explain the responsibilities, rights and assess the safety and risk. |
| **C411B.5** | Apply the social responsibility on multinational corporations related to engineering |

**CO-PO-PSO CORRELATION LEVEL MATRIX**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C411B.1** | 2 | 2 | 2 | 2 | - | 3 | 3 | 3 | 3 | 3 | - | 2 | 1 | 2 |
| **C411B.2** | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | - | 2 | - | 2 |
| **C411B.3** | 2 | 2 | - | - | - | - | 2 | 3 | 2 | 3 | 1 | 1 | - | 2 |
| **C411B.4** | - | - | - | - | - | 3 | 3 | 3 | 3 | 2 | 2 | 2 | - | 2 |
| **C411B.5** | - | - | - | - | - | 3 | 3 | 3 | 3 | - | - | - | - | 2 |
| **C411B** | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 1 | 2 |

**Course Name: C412 (CS6811- Project Work)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C412.1** | Identify the problem by applying acquired knowledge. |
| **C412.2** | Analyze and categorize executable project modules after considering risks. |
| **C412.3** | Choose efficient tools for designing project modules. |
| **C412.4** | Combine all the modules through effective team work after efficient testing. |
| **C412.5** | Elaborate the completed task and compile the project report. |

**CO-PO-PSO CORRELATION LEVEL MATRIX**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C412.1** | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 2 | 3 | - | 2 | 3 | 2 | 3 |
| **C412.2** | 3 | 3 | 2 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 2 | 3 | 3 | 3 |
| **C412.3** | 3 | 3 | 3 | 2 | 3 | - | 2 | 3 | 3 | 3 | 2 | 3 | 3 | 3 |
| **C412.4** | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 3 | 3 | 3 | 2 | 3 | 3 | 3 |
| **C412.5** | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 3 | 3 | 3 | 2 | 3 | 3 | 3 |
| **C412** | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 3 | 3 | 3 | 2 | 3 | 3 | 3 |

**Course Name: C410A (CS6008/Human Computer Interactions)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C410A.1** | Understand the fundamentals of Human Computer Interaction. |
| **C410A.2** | Explain Interaction and prototyping |
| **C410A.3** | Discuss models and theories |
| **C410A.4** | Elaborate Mobile HCI |
| **C410A.5** | Develop meaningful user interface. |

**CO-PO-PSO CORRELATION LEVEL MATRIX**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C410A.1** | 3 | 3 | 3 | 2 | 2 | 1 | 1 | 2 | 2 | 1 | - | 2 | 2 | 3 |
| **C410A.2** | 3 | 2 | 3 | 2 | 2 | 1 | 1 | - | - | 1 | - | 2 | 2 | 2 |
| **C410A.3** | 2 | 2 | 3 | 2 | 2 | 3 | 2 | - | - | - | - | 2 | 2 | 2 |
| **C410A.4** | 2 | 3 | 3 | 2 | 2 | - | 1 | 2 | 2 | - | - | 2 | 2 | 2 |
| **C410A.5** | 2 | 2 | 3 | 2 | 2 | 1 | 2 | 2 | - | - | - | 3 | 3 | 2 |
| **C410A** | 2 | 2 | 3 | 2 | 2 | 1 | 1 | 2 | 2 | 1 | - | 2 | 2 | 2 |

**Course Name: C411A (MG6088/Software Project Management)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C411A.1** | Outline the importance of Software Project Management |
| **C411A.2** | Apply software process models using Agile method and Scrum. |
| **C411A.3** | Assess the activity planning and risk management with CPM and PERT |
| **C411A.4** | Elaborate framework for project management and control |
| **C411A.5** | Evaluate staffing in software projects |

**CO-PO-PSO CORRELATION LEVEL MATRIX**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** |
| **C411A.1** | 2 | 2 | 2 | 3 | 3 | 3 | - | - | 3 | - | 2 | 2 | 2 | 2 |
| **C411A.2** | 2 | 2 | 2 | 3 | 3 | 2 | - | 3 | 3 | - | 2 | 2 | 1 | 2 |
| **C411A.3** | 2 | 3 | 3 | - | - | 2 | - | 3 | 3 | - | 2 | 2 | 1 | 2 |
| **C411A.4** | 3 | 3 | 2 | - | 3 | 3 | 3 | - | 3 | 3 | 3 | 2 | 1 | 2 |
| **C411A.5** | 3 | 2 | 2 | 3 | - | 3 | 3 | - | 3 | 3 | 2 | 3 | 2 | 2 |
| **C411A** | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 1 | 2 |

**LIST OF ELECTIVES**

**SEMSTER VI-ELECTIVE I**

**Course Name: C314A (CS6001/C# and .NET Programming)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C314A.1** | Explain the basic elements of C#. |
| **C314A.2** | Explain the object oriented aspects of C#. |
| **C314A.3** | Develop windows application using C# on .NET. |
| **C314A.4** | Develop windows application using ADO .NET. |
| **C314A.5** | Demonstrate web based applications on .NET. |

**Course Name: C314C (IT6702/Data ware housing and Data mining)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C314C.1** | To understand concepts of Data warehousing, components of data warehousing and design schemas. |
| **C314C.2** | To understand the concepts of OLAP and OLAP tools |
| **C314C.3** | To understand data, types of data and issues in data mining. |
| **C314C.4** | To understand the concepts of mining methods and classification types and apply the algorithms to datasets. |
| **C314C.5** | To understand the clustering methods and apply algorithms to datasets. |

**Course Name: C314D (CS6002/Network analysis and Management)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C314D.1** | Learn network devices functions and configurations hub, switch, tap and routers. |
| **C314D.2** | Be familiar with network Security Devices. |
| **C314D.3** | Be familiar with network Security Devices. |
| **C314D.4** | Learn to analyze network traffic and protocols |
| **C314D.5** | Understand network security concepts. |

**Course Name: C314E (IT6004/Software Testing)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C314E.1** | To study fundamental concepts in software testing, including software testing objectives, process, criteria, strategies, and methods. |
| **C314E.2** | To highlight the strategies for software testing and understand the various types of black box and white box testing methods. |
| **C314E.3** | To discuss various software testing issues and solutions in unit test, integration, regression, and system testing. |
| **C314E.4** | To identify the issues in testing management and understand test planning. |
| **C314E.5** | To gain the techniques and skills on how to use modern software testing tools to support software testing Projects. |

**Course Name: C405B (CS6004/Cyber Forensics)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C405B.1** | Learn the security issues network layer and transport layer. |
| **C405B.2** | Be exposed to security issues of the application layer |
| **C405B.3** | To Learn computer forensics. |
| **C405B.4** | Be familiar with forensics tools. |
| **C405B.5** | Learn to analyze and validate forensics data. |

**Course Name: C405C (CS6005/Advanced Database Systems)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C405C.1** | Learn the various types’ databases. |
| **C405C.2** | To discus about active database and uses. |
| **C405C.3** | To Learn temporal and object database and evaluation techniques. |
| **C405C.4** | To understand the complex queries and reasoning. |
| **C405C.5** | Ability to use spatial, Text and Multimedia Databases. |

**Course Name: C405D (BM6005/Bio Informatics)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C405D.1** | Exposed to the need for Bioinformatics technologies. |
| **C405D.2** | Be familiar with the modeling techniques. |
| **C405D.3** | Learn microarray analysis and modeling. |
| **C405D.4** | Exposed to Pattern Matching and Visualization. |
| **C405D.5** | Ability to use microarray analysis and modeling. |

**Course Name: C405E (IT6801/Service Oriented Architectures)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C405E.1** | Learn XML fundamentals and schemas. |
| **C405E.2** | Be exposed to build applications based on XML. |
| **C405E.3** | Understand the key principles behind SOA. |
| **C405E.4** | Be familiar with the web services technology elements for realizing SOA. |
| **C405E.5** | Learn the various web service standards. |

**Course Name: C406A (IT6005/Digital Image Processing)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C406A.1** | Learn digital image fundamentals and concepts. |
| **C406A.2** | Be exposed to simple image processing techniques. |
| **C406A.3** | Be familiar with image compression and segmentation techniques. |
| **C406A.4** | Learn to represent image in form of features. |
| **C406A.5** | Ability to representation and recognition of image. |

**Course Name: C406B (EC6703/Embedded and Real Time Systems)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C406B.1** | Learn the architecture and programming of ARM processor |
| **C406B.2** | Be familiar with the embedded computing platform design and analysis. |
| **C406B.3** | Be exposed to the basic concepts of real time Operating system. |
| **C406B.4** | Learn the system design techniques and networks for embedded systems |
| **C406B.5** | Ability to apply in various case studies. |

**Course Name: C406C (CS6006/Game Programming)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C406C.1** | Understand the concepts of Game design and development. |
| **C406C.2** | Learn the processes, mechanics and issues in Game Design. |
| **C406C.3** | Be exposed to the Core architectures of Game Programming. |
| **C406C.4** | Know about Game programming platforms, frame works and engines. |
| **C406C.5** | Learn to develop games. |

**Course Name: C406E (IT6006/Data Analytics)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C406E.1** | To be exposed to big data |
| **C406E.2** | Learn the different ways of Data Analysis |
| **C406E.3** | Be familiar with data streams |
| **C406E.4** | Learn the mining and clustering |
| **C406E.5** | Be familiar with the visualization |

**Course Name: C410A (CS6008/Human Computer Interactions)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C410A.1** | Understand the fundamentals of Human Computer Interaction. |
| **C410A.2** | Explain Interaction and prototyping |
| **C410A.3** | Discuss models and theories |
| **C410A.4** | Elaborate Mobile HCI |
| **C410A.5** | Develop meaningful user interface. |

**Course Name: C410B (CS6009/ Nano Computing)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C410B.1** | Learn nano computing challenges |
| **C410B.2** | Be familiar with the imperfections |
| **C410B.3** | Be exposed to reliability evaluation strategies. |
| **C410B.4** | Learn nano scale quantum computing. |
| **C410B.5** | Understand Molecular Computing and Optimal Computing |

**Course Name: C410D (CS6010/Social Network Analysis)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C410D.1** | Understand the concept of semantic web and related applications. |
| **C410D.2** | Learn knowledge representation using ontology. |
| **C410D.3** | Understand human behavior in social web and related communities. |
| **C410D.4** | Learn visualization of social networks. |
| **C410D.5** | Develop semantic web related applications. |

**Course Name: C411A (MG6088/Software Project Management)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C411A.1** | Outline the importance of Software Project Management |
| **C411A.2** | Apply software process models using Agile method and Scrum. |
| **C411A.3** | Assess the activity planning and risk management with CPM and PERT |
| **C411A.4** | Elaborate framework for project management and control |
| **C411A.5** | Evaluate staffing in software projects |

**Course Name: C411C (CS6011/Natural Language Processing)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C411C.1** | Learn the techniques in natural language processing. |
| **C411C.2** | Be familiar with the natural language generation. |
| **C411C.3** | Be exposed to machine translation. |
| **C411C.4** | Understand the information retrieval techniques. |
| **C411C.5** | Apply information retrieval techniques. |

**Course Name: C411D (CS6012/Soft Computing)**

At the end of the course, the student should be able to:

|  |  |
| --- | --- |
| **C411D.1** | Learn the various soft computing frame works. |
| **C411D. 2** | Be familiar with design of various neural networks. |
| **C411D.3** | Be exposed to fuzzy logic. |
| **C411D.4** | Learn genetic programming. |
| **C411D.5** | Be exposed to hybrid systems. |