

**HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY**  
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**OUTCOME BASED EDUCATION – MANUAL**  
**(R-2016 & R-2019)**

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# **OUTCOME BASED EDUCATION MANUAL (R-2016 & R-2019)**

## **1. ABOUT THE INSTITUTE**

Hindusthan College of Engineering and Technology was established in the year 2000. The college is approved by the All India Council of Technical Education (AICTE), New Delhi and affiliated to Anna University, Chennai. Five UG Programmes: (i) CSE (ii) MECH (iii) ECE (iv) EEE (v) IT has been accredited by NBA for three years from 2017. The Institution have been accredited with 'A' grade by NAAC. The College is certified with ISO 9001:2015. Also the institution is Autonomous from the academic year 2016-2017 onwards. The institution offers 15 UG Programmes namely CSE, IT, ECE, EEE, MECH, AERO, CIVIL, MECHATRONICS, E&I, AUTO, Bio-Medical, Food Technology, Agri, AI&ML, Chemical and 7 PG Programmes. The department of MECH, CSE, ECE and EEE are recognized as research centers by Anna University Chennai to offer Ph.D programmes.

HiCET works with the vision of producing qualified Engineering Professionals adorned with moral values and technical skill to uphold jobs at global level. The strength of the institution is the team of well experienced Professors who involve themselves in grooming the students on par with global standard. The institution offers outcome based curriculum and student centric learning.

The Hindusthan Educational team is led by our Chairman Shri. T.S.R. Khannaiyann, an industrialist and philanthropist. The Managing Trustee Smt. Sarasuwathi Khannaiyann, a well-known Educationalist and leading Entrepreneur in Coimbatore and she has been a proud recipient of many prestigious awards like Bharath Gauyrav Award, Rajiv Gandhi Shironmani Award, Indira Gandhi Sadbavana Award, Best Entrepreneur Award and Life Time Education Award. She also holds her honorary doctorate from International Tamil University for her active contribution towards education. She has a great passion and keen interest with perseverance on Women Education

and Women Empowerment. Hence the Institution houses nearly 30% of the total as girl students and more women employees, out of which many of our girl students and women employees are from rural area. Dr.Priya Sathish Prabu, Executive Trustee and Secretary is presently taking care of the institution operations efficiently.

## **2. PREAMBLE**

This manual is a reference to help faculty members and Stakeholders to understand the Outcome Based Education (OBE) system implemented at Hindusthan College of Engineering and Technology (HiCET) since 2014. This manual provides a detailed description of Outcome Based Education implementation at all the four stages of educational process including Curriculum design, Teaching and Learning process, Assessment & Evaluation and Continuous quality improvement. Also it provides suitable guidelines for the faculty members to develop the course plan, assessment plan etc., in the process to measure the outcome of the students during their course of study and also after their graduation.

## **3. INSTITUTION VISION AND MISSION**

### **VISION**

To become a premier institution by producing professionals with strong technical knowledge, innovative research skills and high ethical values.

### **MISSION**

IM1: To provide academic excellence in technical education through novel teaching methods.

IM2: To empower students with creative skills and leadership qualities.

IM3: To produce dedicated professionals with social responsibility.

#### 4. PRIMARY DEFINITIONS AND NOMENCLATURE

**Vision:** A vision statement is a document that states the current and future objectives of a Department. The vision statement is intended as a guide to help the department make decisions that align with its philosophy and declared set of goals.

**Mission:** The mission statement should define the broad purposes the program /department is aiming to achieve, describe the community the program /department is designed to serve, and state the values and guiding principles which define its standards.

**Program Educational Objectives (PEOs):** PEOs are broad statements that describe the career and professional accomplishments that the program is preparing graduates to achieve. Knowledge, Skill and Attitude are the three behavioral elements based on which PEOs are constructed.

**Program Outcomes (POs):** Program outcomes are statements that describe what students are expected to know and be able to do upon graduating from the program. These relate to the skills, knowledge, analytical ability, attitude and behavior that students acquire through the program.

**Program Specific Outcomes (PSOs):** Program Specific Outcomes are statements that describe what the graduates of a specific engineering program should be able to do.

**Course Outcomes (COs):** It is a detailed description of what a student must be able to do at the conclusion of a course.

**Course Information Sheet (CIS):** This sheet summarizes the information of a particular course and it gives the overall view of how the COs and POs are mapped in each unit.

**Continuous Internal Assessment (CIA):** Continuous Internal Assessment is a form of educational examination that evaluates a student's progress throughout a prescribed course.

**End Semester Examinations (ESE):** ESE means the examinations to be held at the end of each semester separately for theory & practical part on such dates as the University/College may determine.

## **5. OUTCOME BASED EDUCATION (OBE)**

It is a process that involves the restructuring of curriculum, assessment and reporting practices in education to reflect the achievement of higher order learning and mastery rather than the accumulation of course credits.

Outcome-Based Education (OBE) model is being adopted in Engineering colleges now-a-days as per AICTE guidelines. It is considered as a giant leap forward to improve technical education in India and help Engineers compete with their global counterparts. .

Outcome based education (OBE) is student-centered instruction model that focuses on measuring student performance through outcomes. Outcomes include knowledge, skills and attitudes. Its focus remains on evaluation of outcomes of the program by stating the knowledge, skill and behavior a graduate is expected to attain upon completion of a program and after 4 – 5 years of graduation. In the OBE model, the required knowledge and skill sets for a particular engineering degree is predetermined and the students are

evaluated for all the required parameters (Outcomes) during the course of the program.

The induction of India in the Washington Accord in 2014 with the permanent signatory status of the National Board of Accreditation (NBA) is considered a big leap forward for the higher-education system in India. It means that an Engineering graduate from India can be employed in any one of the other countries who have signed the accord. For Indian Engineering Institutions to get accredited by NBA according to the pacts of the accord, it is compulsory that engineering institutions follow the Outcome Based Education (OBE) model. So, for an Engineering Institution to be accredited by NBA it should compulsorily follow the OBE model.

### **5.1 Features of OBE**

- OBE is an educational process that focuses on what students can do or the qualities they should develop after they are taught.
- OBE involves the restructuring of curriculum, assessment and reporting practices in education to reflect the achievement of higher order learning and mastery rather than accumulation of course credits.
- Both structures and curricula are designed to achieve those capabilities or qualities.
- Discourages traditional education approaches based on direct instruction of facts and standard methods.
- It requires that the students demonstrate that they have learnt the required skills and content.

### **5.2 Deficiencies in Traditional education**

- Provides students with a learning environment with little attention to whether or not students ever learn the material.

- Students are given grades and rankings compared to each other – students become exam oriented or CGPA driven.
- Graduates are not completely prepared for the workforce.
- Lack of emphasis on soft skills needed in jobs e.g. communication skills, interpersonal skills, analytical skills, working attitude etc.

### **5.3 Expectations of students under OBE – the outcome**

- Students are expected to be able to do more challenging tasks other than memorize and reproduce what was taught.
- Students should be able to: write project proposals, complete projects, analyze case studies, give case presentations, show their abilities to think, question, research, and make decisions based on the findings.
- Be more creative, able to analyze and synthesize information.
- Able to plan and organize tasks, able to work in a team as a community or in entrepreneurial service teams to propose solutions to problems and market their solutions.
- Students should be enriched on three dimensional scales of knowledge, skill and attitude throughout the course.

## **6. PROCESS OF DEFINING VISION AND MISSION OF THE DEPARTMENT**

The following steps are followed to establish Vision and Mission of Department.

**Step 1:** The Vision & Mission of the Institute is taken as the basis.

**Step 2:** The Department conducts brain-storming sessions with the faculty on the skill-set required by the local and global employers, Industry Advances in Technology and R & D, and the draft copy of the Vision and Mission of the Department is drafted.

**Step 3:** The views from Parents, Professional Bodies, Industry representatives, Board of Studies (BOS) and Department Advisory Committee (DAC) are collected and incorporated to revise the draft version based on their inputs.

**Step 4:** The accepted views are analyzed and reviewed to check the consistency with the vision and mission of the institute.

## **7. PROCESS OF DEFINING PSOs AND PEOs OF THE DEPARTMENT**

- The Program curriculum is designed by incorporating inputs from members of Board of Studies, Curriculum Development Council and Academic council constituted by members from various academic institutions, R&D organizations and industry.
- Inputs are obtained from alumni and other stake holders. Also the inputs are considered from reports like WEF's Future of Jobs, India skills, FICCI and Deloitte.
- Besides, a skill in demand analysis is carried out periodically at the Academic council, Programme Assessment Committee and Department Advisory committee to identify the core areas in the Program domain that are consistent with industry needs.
- The Centre of Excellence in the department is established based on core areas in the program
- PSOs are defined based on the Centre of Excellence of the Department. A list of 2 to 4 Program Specific Outcomes (PSOs) that the graduates of the program will attain will be listed here.
- The PEOs are established to reflect the career and professional accomplishments of the graduates based on the three behavioral elements of Knowledge, Skill and Attitude.

## **8. THE PROGRAM OUTCOMES (POS) DEFINED BY NATIONAL BOARD OF ACCREDITATION (NBA)**

The POs essentially indicate what the students can do from subject-wise knowledge acquired by them during the program. As such, POs define the professional profile of an engineering graduate. NBA has defined the following twelve POs for an engineering graduate. These are in line with the Graduate Attributes as defined by the Washington Accord.

- 1. Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, an engineering specialization to the solution of complex engineering problems.
- 2. Problem Analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences.
- 3. Design/Development of Solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- 4. Conduct Investigations of Complex Problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions for complex problems.
- 5. Modern Tool Usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction

and modeling to complex engineering activities with an understanding of the limitations.

- 6. The Engineer and Society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- 7. Environment and Sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- 8. Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- 9. Individual and Team Work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- 10. Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- 11. Project Management and Finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

**12. Life-long Learning:** Recognize the need for, and have the preparation and ability to engage in independent and lifelong learning in the broadest context of technological change.

## 9. PUBLICATION AND DISSEMINATION

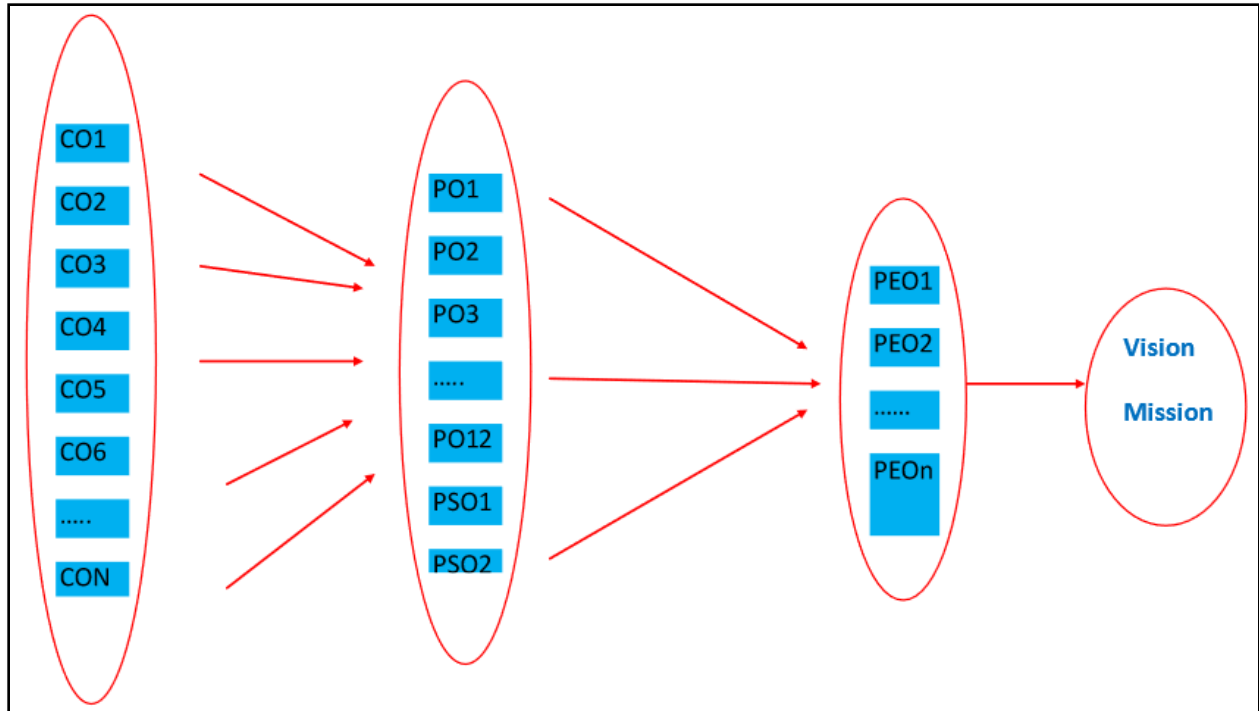
The Vision, Mission statement of the Department and Institution, CO statements, PSO statements, PO and PEO statements are reached to all the students and stake holders of the department. The process of publication and dissemination is described below.

- College Website
- Principal Room
- Department
- HOD Chamber
- Laboratories
- Department Library
- Classrooms
- Curriculum and Syllabi
- Lab Manuals
- Course files
- News Letter
- Department Magazines

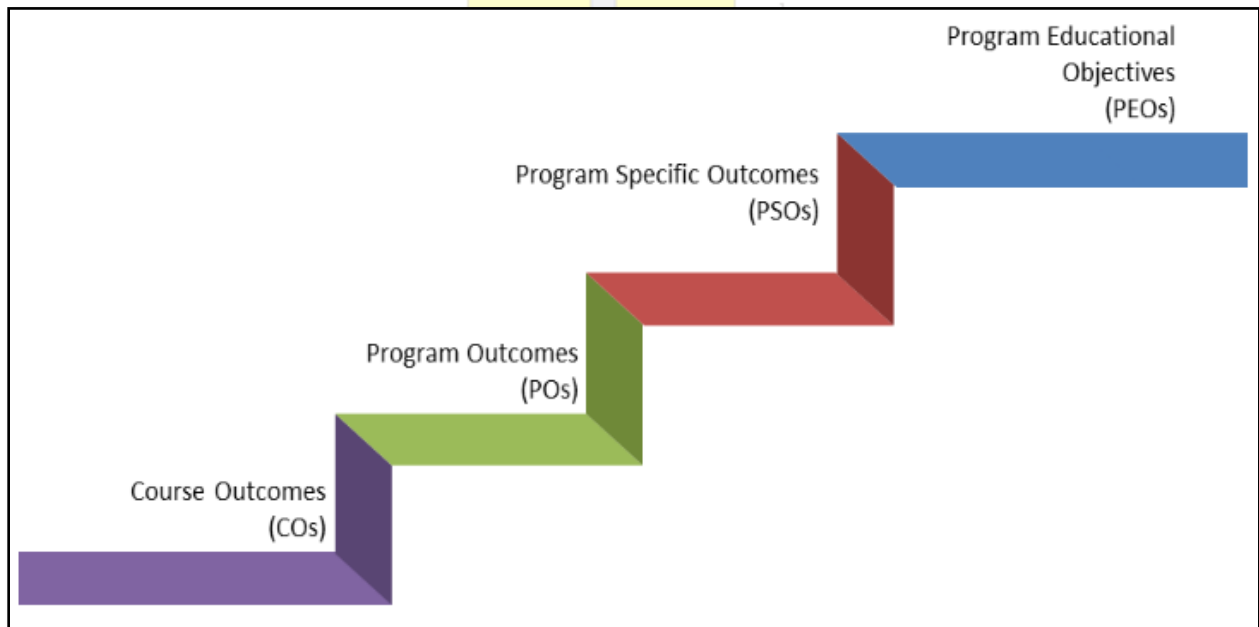


The OBE model measures the progress of the graduate in four parameters, which are

- Program Educational Objectives (PEO)
- Program Outcomes (PO)
- Program Specific Outcomes (PSO)
- Course Outcomes (CO)



**Figure 1. Parameters of Outcome Based Education (OBE)**



**Figure 2: Process for the evaluation of Programme Outcomes POs, PSOs and PEOs**

## 10. COURSE OUTCOME STATEMENTS

**10.1 Course Outcomes (COs):** Statements indicate, what a student can do after the successful completion of a course. Every Course leads to some Course Outcomes. The CO statements are defined by considering the course content covered in each module of a course. For every course there may be 5 or 6 COs. The keywords used to define COs are based on Bloom's Taxonomy.

### 10.2 CO – PO and CO – PSO mapping of courses

All the courses in the curriculum must cover all the POs (and PSOs). For a course, we map the COs to POs through the CO-PO matrix and to PSOs through the CO-PSO matrix in Course Information Sheet (CIS). The various correlation levels are:

- “1” – Slight (Low) Correlation
- “2” – Moderate (Medium) Correlation
- “3” – Substantial (High) Correlation
- “-” indicates there is no correlation.

\* Course Information Sheet (CIS) is attached as **ANNEXURE I**

### 10.3 Process involved in CO-PO Mapping

The role of CO-PO mapping will be assigned to the faculty involved in the teaching-learning process of that particular course. After the course (subject) allotment by the department, the course coordinator of the course has to write appropriate COs for their corresponding course discussing with subject handling faculty members. It should be narrower and measurable statements. By using the action verbs of learning levels (Bloom's Taxonomy), CO's will be designed. CO statements should describe what the students are expected to know and able to do at the end of each course, which are related to the skills, knowledge and behavior that students will acquire through the course.

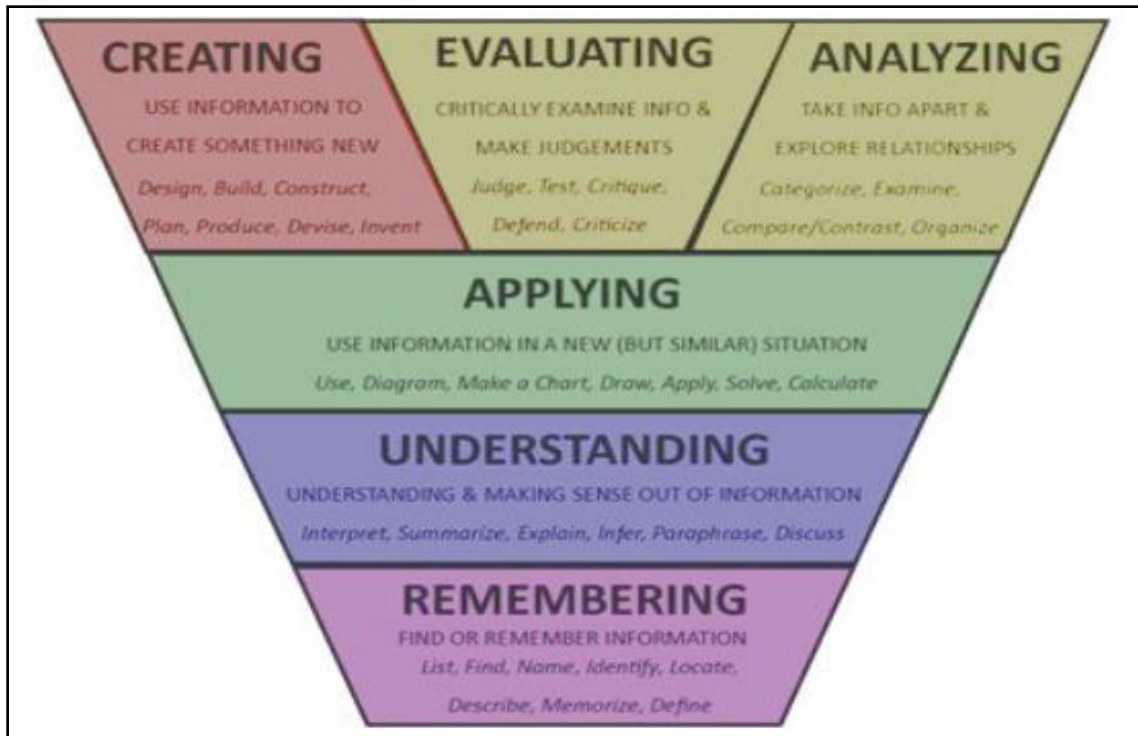
After writing the CO statements, CO will be mapped with PO of the department. The Course Outcome attainment coordinator has to consolidate the CO's of the respective year and maintain the documentation of the CO attainment level of the respective year courses as well as documentation of the individual students extra-curricular and co-curricular activities for PO attainment evaluation.

## 11. BLOOMS TAXONOMY

Bloom's Taxonomy was created in 1956 under the leadership of educational psychologist Dr. Benjamin Bloom in order to promote higher forms of thinking in education, such as analyzing and evaluating concepts, processes, procedures, and principles, rather than just remembering facts. It is most often used when designing educational, training, and learning processes.

| <b>BLOOM'S TAXONOMY</b>  |  |   |
|--|--|---|
| <b>Domains</b>   | <b>Keywords</b>  | <b>Example</b>  |
| <p><b>Remembering:</b><br/>Recall or retrieve previous information.</p>  | <p>defines, describes, identifies, knows, labels, lists, matches, names, outlines, recalls, recognizes, reproduces, selects, states</p>  | <p>Recite a policy.<br/>Quote prices from memory to a customer.<br/>Recite the safety rules.</p>  |
| <p><b>Understanding:</b><br/>Comprehending the meaning, translation, interpolation, and interpretation of instructions and problems. State a problem in one's own words.</p> | <p>comprehends, converts, defends, distinguishes, estimates, explains, extends, generalizes, gives an example, infers, interprets, paraphrases, predicts, rewrites, summarizes, translates</p> | <p>Rewrite the Principles of test writing.<br/>Explain in one's own words the steps for performing a complex task.<br/>Translate an equation into a computer spreadsheet.</p> |

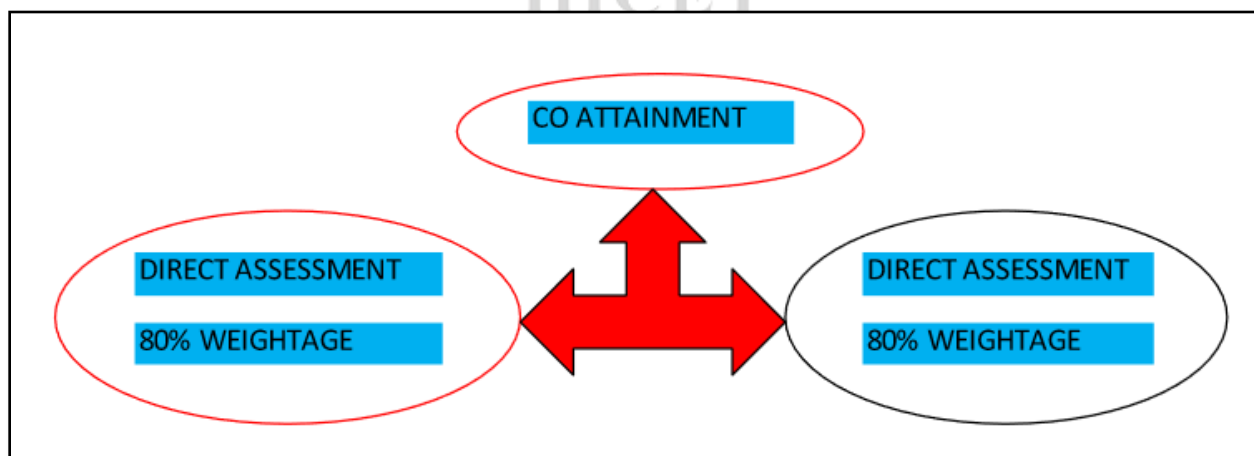
|  |  |  |
|--|--|--|
| <p><b>Applying:</b><br/>Use a concept in a new situation or unprompted use of an abstraction. Applies what was learned in the classroom into novel situations in the workplace.</p>  | <p>applies, changes, computes, constructs, demonstrates, discovers, manipulates, modifies, operates, predicts, prepares, produces, relates, shows, solves, uses</p>  | <p>Use a manual to calculate an employee's vacation time.<br/>Apply laws of statistics to evaluate the reliability of a written test.</p>  |
| <p><b>Analyzing:</b><br/>Separates material or concepts into component parts so that its organizational structure may be understood. Distinguishes between facts and inferences.</p> | <p>Analyzes, breaks down, compares, contrasts, diagrams, deconstructs, differentiates, discriminates, distinguishes, identifies, illustrates, infers, outlines, relates, selects, separates</p>                            | <p>Troubleshoot a piece of equipment by using logical deduction.<br/>Recognize logical fallacies in reasoning.<br/>Gathers information from a department and selects the required tasks for training</p>               |
| <p><b>Evaluating:</b><br/>Make judgments about the value of ideas or materials.</p>  | <p>appraises, compares, concludes, contrasts, criticizes, critiques, defends, describes, discriminates, evaluates, explains, interprets, justifies, relates, summarizes, supports</p>                                      | <p>Select the most Effective solution.<br/>Hire the most qualified candidate.<br/>Explain and justify a new budget.</p>  |
| <p><b>Creating:</b><br/>Builds a structure or pattern from diverse elements. Put parts together to form a whole, with emphasis on creating a new meaning or structure.</p>           | <p>Categorizes, combines, compiles, composes, creates, devises, designs, explains, generates, modifies, organizes, plans, rearranges, reconstructs, relates, reorganizes, revises, rewrites, summarizes, tells, writes</p> | <p>Write a company Operations or process manual.<br/>Design a machine to perform a specific task.<br/>Integrates training from several sources to solve a problem.<br/>Revises and process to improve the outcome.</p> |



**Figure 3: BLOOM'S TAXONOMY**

**Methods of CO attainment assessment**

Both direct and indirect method of assessment is followed for Course Outcome (CO) attainment assessment. The weightage for Direct Attainment is 80% while that for Indirect Attainment is 20%.



**Figure 4: CO Attainment**

The various assessment tools for direct attainment assessments are Internal Tests, Mid -Semester and End Semester Examination and Assignments. The Indirect tool used is Course Exit survey.

### CO assessment process for various courses in the curriculum

The curriculum is a bundle of various components like Theory Courses, Theory with Lab Components, Laboratory Courses, Mini-Projects, Projects and Internships /Implant training / Technical seminar

| THEORY COURSES             |   |       | WEIGHTAGE  | REGULATION    |
|----------------------------|---|-------|------------|---------------|
| METHOD                     | ASSESSMENT TOOLS  | MARKS |            |               |
| <b>Direct Assessment</b>   | a. <u>Internal Examinations and Mid-Semester Examination</u><br>CO1 & CO2 – Internal Exam I & Mid semester<br>CO2 & CO3 – Internal Exam II & Mid semester<br>CO4 & CO5 - Mid semester & Internal Exam III | 15    | <b>80%</b> | <b>R-2016</b> |
|                            | b. <u>Assignment</u><br>CO1 & CO2 - Assignment 1<br>CO2 & CO3 - Assignment 2<br>CO4 & CO5 - Assignment 3  | 5     |            |               |
|                            | c. Attendance   | 5     |            |               |
|                            | d. End Semester Examinations  | 75    |            |               |
|                            | Total Marks   | 100   |            |               |
| <b>Indirect Assessment</b> | Course Exit Survey  | 5     | <b>20%</b> |               |

\* CO attainment sheet for theory courses is attached as **ANNEXURE II**

| <b>THEORY COURSES</b>      |  |              |                  | <b>REGULATION</b> |
|----------------------------|--|--------------|------------------|-------------------|
| <b>METHOD</b>              | <b>ASSESSMENT TOOLS</b>  | <b>MARKS</b> | <b>WEIGHTAGE</b> |                   |
| <b>Direct Assessment</b>   | a. <u>Internal Examinations and Mid-Semester Examination</u><br>CO1 & CO2 – Internal Exam I<br>CO3 – Mid semester Exam<br>CO4 & CO5 - Internal Exam II | 15           | <b>80%</b>       | <b>R-2019</b>     |
|                            | b. <u>Assignment</u><br>CO1 & CO2-Assignment 1<br>CO3 - Assignment 2<br>CO4 & CO5-Assignment 3   | 5            |                  |                   |
|                            | c. Attendance  | 5            |                  |                   |
|                            | d. End Semester Examinations   | 75           |                  |                   |
|                            | Total Marks  | 100          |                  |                   |
| <b>Indirect Assessment</b> | Course Exit Survey   | 5            | <b>20%</b>       |                   |

| THEORY WITH LAB COMPONENT COURSES |   |       |           | REGULATION    |
|-----------------------------------|---|-------|-----------|---------------|
| METHOD                            | ASSESSMENT TOOLS  | MARKS | WEIGHTAGE |               |
| <b>Direct Assessment</b>          | <b>ASSESSMENT OF THEORY COURSE</b>  |       |           | <b>R-2016</b> |
|                                   | a. <u>Internal Examinations and Mid-Semester Examination</u><br>CO1 & CO2 – Internal Exam I & Mid semester<br>CO2 & CO3 – Internal Exam II & Mid semester<br>CO4 & CO5 - Mid semester & Internal Exam III | 15    | 80%       |               |
|                                   | b. <u>Assignment</u><br>CO1 & CO2-Assignment 1<br>CO2 & CO3-Assignment 2<br>CO4 & CO5-Assignment 3  | 5     |           |               |
|                                   | c. Attendance   | 5     |           |               |
|                                   | d. End Semester Examinations  | 75    |           |               |
|                                   | Total Marks   | 100   |           |               |
|                                   | <b>ASSESSMENT OF LAB COURSE</b>   |       |           |               |
|                                   | CO1 to CO5 is assessed through Continuous Internal Assessment of each experiment in Laboratory  | 25    |           |               |
|                                   | Model Examination   | 25    |           |               |
|                                   | Total Marks   | 50    |           |               |
| <b>Indirect Assessment</b>        | Course Exit Survey  | 5     | 20%       |               |

\* CO attainment sheet for theory with Lab component courses is attached as **ANNEXURE III**

| THEORY WITH LAB COMPONENT COURSES |  |           |           | REGULATION    |  |
|-----------------------------------|--|-----------|-----------|---------------|--|
| METHOD                            | ASSESSMENT TOOLS   | MARKS     | WEIGHTAGE |               |  |
| <b>Direct Assessment</b>          | <b>ASSESSMENT OF THEORY COURSE</b>   |           |           | <b>R-2019</b> |  |
|                                   | <u>a. Internal Examinations and Mid-Semester Examination</u><br>CO1 & CO2 - Internal Exam I<br>CO3 - Mid semester<br>CO4 & CO5 - Internal Exam III | 15        | 80%       |               |  |
|                                   | <u>b. Assignment</u><br>CO1 & CO2 - Assignment 1<br>CO3 - Assignment 2<br>CO4 & CO5 - Assignment 3   | 5         |           |               |  |
|                                   | c. Attendance  | 5         |           |               |  |
|                                   | <b>Total Marks</b>   | <b>25</b> |           |               |  |
|                                   | <b>ASSESSMENT OF LAB COURSE</b>  |           |           |               |  |
|                                   | CO1 to CO5 is assessed through Continuous Internal Assessment of each experiment in Laboratory   | 5         |           |               |  |
|                                   | Model Examination  | 25        |           |               |  |
|                                   | <b>Total Marks</b>   | <b>25</b> |           |               |  |
|                                   | End Semester Examinations  | 50        |           |               |  |
| <b>Indirect Assessment</b>        | Course Exit Survey   | 5         |           | 20%           |  |

| <b>PRACTICAL COURSES</b> |  |              |                  | <b>REGULATION</b>                  |
|--------------------------|--|--------------|------------------|------------------------------------|
| <b>METHOD</b>            | <b>ASSESSMENT TOOLS</b>  | <b>MARKS</b> | <b>WEIGHTAGE</b> |                                    |
| DIRECT                   | a. CO1 to CO5 assessed is Continuous through Assessment Internal experiment. of each | <b>25</b>    | <b>80%</b>       | <b>R-2016<br/>&amp;<br/>R-2019</b> |
|                          | b. Model Exam  | <b>25</b>    |                  |                                    |
|                          | c. End Semester Exam   | <b>50</b>    |                  |                                    |
|                          | Total Marks  | <b>100</b>   |                  |                                    |
| INDIRECT                 | Course Exit Survey   | <b>5</b>     | <b>20%</b>       |                                    |

\* CO attainment sheet for practical courses is attached as ANNEXURE IV

| <b>MINI PROJECTS</b>       |   |              |                  |                                    |
|----------------------------|---|--------------|------------------|------------------------------------|
| <b>METHOD</b>              | <b>ASSESSMENT TOOLS</b>   | <b>MARKS</b> | <b>WEIGHTAGE</b> | <b>REGULATION</b>                  |
| <b>Direct Assessment</b>   | a.CO1, CO2 & CO3 is assessed through Continuous Internal Assessment from Review I, Review II & Review III based on Rubrics. | 50           | 80%              | <b>R-2016<br/>&amp;<br/>R-2019</b> |
|                            | b. End Semester Exam  | 50           |                  |                                    |
| <b>Indirect Assessment</b> | Course Exit Survey  | 5            | 20%              |                                    |
| <b>MAIN PROJECT</b>        |   |              |                  |                                    |
| <b>METHOD WEIGHTAGE</b>    | <b>ASSESSMENT TOOLS</b>   | <b>MARKS</b> | <b>WEIGHTAGE</b> | <b>REGULATION</b>                  |
| <b>Direct Assessment</b>   | a.CO1, CO2 & CO3 is assessed through Continuous Internal Assessment from Review I, Review II & Review III based on Rubrics. | 100          | 80%              | R-2016<br>&<br>R-2019              |

|                            |                      |     |     |  |
|----------------------------|----------------------|-----|-----|--|
|                            | b. End Semester Exam | 100 |     |  |
| <b>Indirect Assessment</b> | Course Exit Survey   | 5   | 20% |  |

\* CO attainment sheet for Mini-Project and Main Project is attached as **ANNEXURE V & VI**

| <b>INTERNSHIP/INPLANT TRAINING &amp; TECHNICAL SEMINAR</b> |                         |              |                  | <b>REGULATION</b> |
|--|-------------------------|--------------|------------------|-------------------|
| <b>METHOD</b>  | <b>ASSESSMENT TOOLS</b> | <b>MARKS</b> | <b>WEIGHTAGE</b> |                   |
| <b>Direct Assessment</b>                                   | a. End Semester Exam    | 100          | 80%              | R-2016            |
| <b>Indirect Assessment</b>                                 | b. Course Exit Survey   | 5            | 20%              |                   |

\* CO attainment sheet for Technical seminar is attached as **ANNEXURE VII**

### **Attainment Levels**

Course outcomes of all courses are assessed with the help of above mentioned assessment tools and attainment level is evaluated based on set attainment rubrics. The target (or set) attainment level should be fixed by the Course coordinator based on the previous year results and quality of current batch of students.

If 80% and more students scored above set attainment level then the Course attainment level is 3. If 70 to 79 % of students scored above set attainment level, then the Course attainment level is 2.

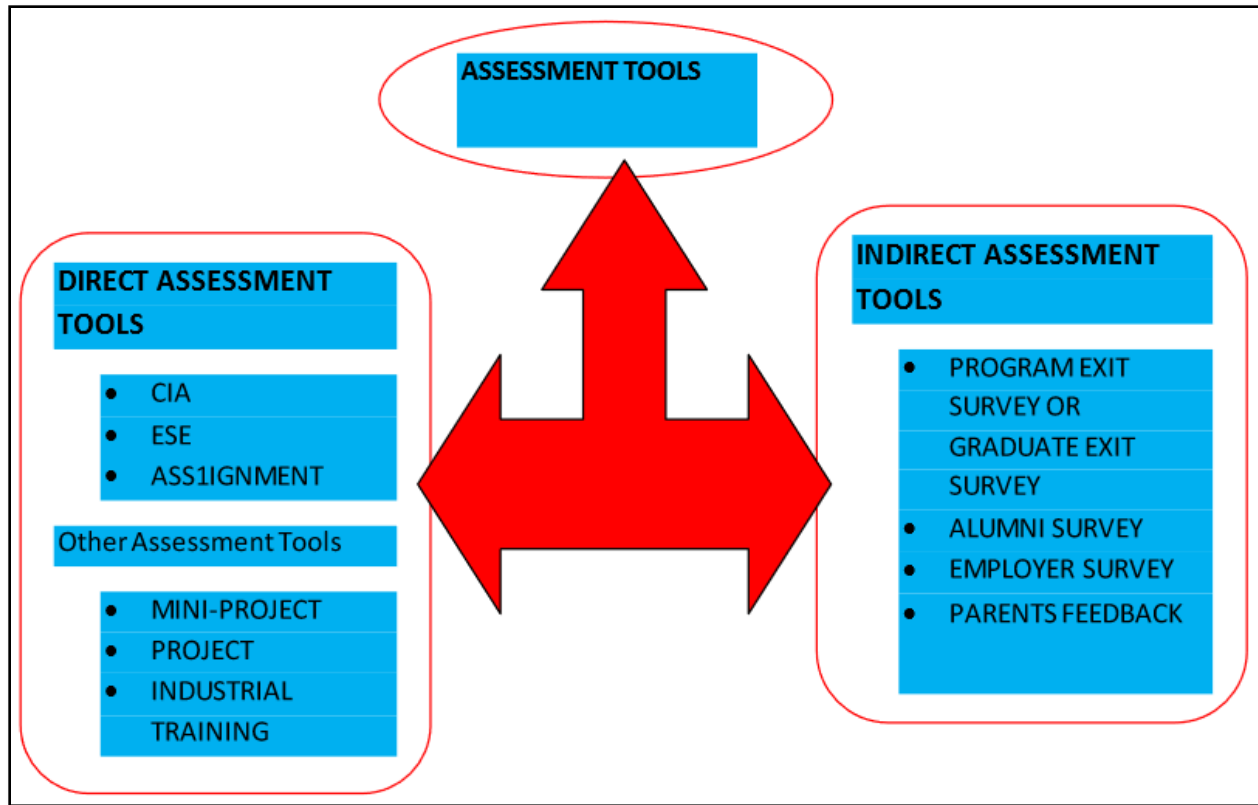
If less than 60 % of students scored above set attainment level, then the Course attainment level is 1.

If the average attainment of a particular course in the previous two consecutive years is greater than 80% of the maximum attainment value (i.e. 80% of 3 = 2.4), then for that particular course the current rubrics for attainment must be changed to analyze continuous improvement.

## **12. PROGRAM OUTCOME (PO)/PROGRAM SPECIFIC OUTCOME (PSO) ASSESSMENT**

At the end of the each program, the PO/PSO assessment is done from the CO attainment of all curriculum components. As per NBA guidelines, program can appropriately define the attainment level. The attainment level may be set by the particular program or commonly by the institution. The attainment can be made as best the choice by the institution or the program by analyzing the student's knowledge. This can be achieved by using different supporting activities. This attainment is mainly for the purpose of making an esteemed engineer with good analytical, practical and theoretical knowledge about the program by attaining the PO's and PSO's of the program and the institution. For the evaluation and assessment of PO's and PSO's, assessment tools are used.

The figure 5 depicts the assessment tools used for the evaluation of program outcomes.



**Figure 5: Assessment Tools for Evaluation of Program Outcomes**

The Program Outcome (PO) attainment and Program Specific Outcome (PSO) attainments are evaluated by direct method with 80% weightage and indirect method with 20% weightage. The Direct attainment level of Particular PO /PSO is determined by taking average of all course outcomes mapping that program Outcome. Indirect attainment level of PO/PSO is determined based on Surveys and Co-curricular activities.

Out of 100%, 30% weightage is given to co-curricular activities and 70% weightage to Surveys. This 100% weightage is converted to 20 % scale for PO attainment calculation. The various Surveys taken are Student exit survey, Employer survey, Alumni survey and Parents feedback. The co-curricular activities are Value added Courses, Workshops etc related to the unattained

POs(less mapped POs in CO-PO matrix). The PO/PSO Attainment Level is fixed as Maximum level of 3 & Minimum level of 1.

### **Course – end Survey**

The course –end survey is based on the feedback taken from the students after studying each course.

\* Attached as **ANNEXURE VIII**

### **Graduate Exit survey**

The graduate exit survey is based on the feedback collected from graduates at the end of the program.

\* Attached as **ANNEXURE IX**

### **Alumni Feedback**

This feedback is about how effectively they can able to implement their knowledge acquired through B.E-Programme in their workplace.

\* Attached as **ANNEXURE X**

### **Employer Feedback**

This feedback is about how alumni of department can able to implement their knowledge in the company.

\* Attached as **ANNEXURE XI**

### **Parent’s Feedback**

This feedback is collected from the parents about their satisfaction in the knowledge, skill and employment level of their wards.

\* Attached as **ANNEXURE XII**

### Co-curricular activities

- Workshops
- Placement training programs
- Value added courses in Modern trends

### 13. PROGRAM EDUCATIONAL OBJECTIVE (PEO) ASSESSMENT

Assessment of achievement of the Program Educational Objectives (PEOs) is done by indirect measurements. Placement record, higher studies and survey forms like alumni survey and employer survey are used to assess the attainment of PEOs. The PEOs are formally reviewed by the Department advisory committee every year. As described above, we solicit feedback from alumni and their employer through formal and informal mechanisms.



  
**Principal**  
**PRINCIPAL**  
Hindusthan College Of Engineering & Technology  
COIMBATORE - 641 032.

## *ANNEXURE I*



*Hindusthan College of Engineering And Technology*  
(An Autonomous Institution, Affiliated to Anna University, Chennai)  
Valley Campus, Pollachi Highway  
Coimbatore – 641 032



**COURSE INFORMATION SHEET**

- 1. Academic Year** : 2020 – 2021(EVEN)
- 2. Name of faculty(s)** : Dr.P.Rajeswari,Mr.P.Suresh Kumar & Ms.R.Vanitha
- 3. Department** : Electronics and Communication Engineering.
- 4. Programme** : B.E., Electronics and Communication Engineering.
- 5. Class and semester** : II year and IV Semester.
- 6. Course code and title** : 19EC4251-Control Systems.
- 7. Regulations** : AUTONOMOUS
- 8. Core / Elective** : Core
- 9. Contact hours** : 45(L30 + P15)
- 10. Type of course** : Analytical
- 11. Number of credits** : 3

**12. Course pre-requisites:**

- (i) 19MA1103 – Calculus and Differential Equations
- (ii) 19MA3102- Fourier Analysis and Transforms
- (iii) 19EC3202 - Signals and Systems

**13. Course learning objectives:**

- (i) An ability to understand the mathematical modeling of control systems.
- (ii) An ability to gain knowledge in the time response analysis of first and second order systems.
- (iii) An ability to examine the various frequency response plots.
- (iv) An ability to enumerate the concept of different stability analysis techniques.
- (v) An ability to describe the concept of state variable analysis.

#### 14. Expected outcome of the course:

##### Course Outcomes:

Upon successful completion of this course, the student will be able to:

|     |   |
|-----|---|
| C01 | To analyze different control systems mathematically and understood the concept of Transfer Function.                |
| C02 | To derive different time domain specifications and analyze the steady state error concept.                          |
| C03 | To analyze the polar, bode and Nichols frequency response plots.  |
| C04 | To analyze the stability of closed loop system applying different techniques.                                       |
| C05 | To understand the concept of state space modeling of continuous time systems and controllability and observability. |

#### 15. Course Syllabus:

|  |   |            |
|--|---|------------|
| <b>UNIT I MATHEMATICAL MODELING OF CONTROL SYSTEMS</b> |   | <b>6+3</b> |
| C01  | Basic components of Control System – Open loop and Closed loop systems – Introduction to Differential equation -Transfer function- Modeling of Electrical and Mechanical systems- Block diagram reduction methods - Signal flow graph. <b>Experimental study- Digital simulation of linear systems.</b>       |            |
| <b>UNIT II TIME RESPONSE ANALYSIS</b>                  |   | <b>6+3</b> |
| C02  | Time response - Order and Type of the Systems – Standard test signals-Unit step Response analysis of first and second order systems – Time domain specifications-Steady state errors – Introduction to P, PI, PD and PID controllers. <b>Experimental study- Response of Proportional controllers.</b>        |            |
| <b>UNIT FREQUENCY RESPONSE ANALYSIS</b>                |   | <b>6+3</b> |
| C03  | Frequency Response - Frequency Domain specifications -Bode Plot, Polar Plot – Constant M and N Circles –Introduction to Lead, Lag, and Lead Lag Compensators. <b>Experimental study- Frequency response analysis of bode plot.</b>  |            |
| <b>UNIT IV STABILITY ANALYSIS</b>                      |   | <b>6+3</b> |
| C04  | BIBO Stability, Routh-Hurwitz Criterion, Root Locus Technique, Construction of Root Locus, Application of Root Locus Diagram - Nyquist Stability Criterion. <b>Experimental study- Stability analysis of linear system using root locus.</b>  |            |
| <b>UNIT V STATE VARIABLE ANALYSIS</b>                  |   | <b>6+3</b> |
| C05  | State space representation of Continuous Time systems – State equations – Physical, Phase and Canonical variable forms-Transfer function from State Variable Representation- Concepts of Controllability and Observability. <b>Experimental study- State space representation of Continuous Time systems.</b> |            |

**TOTAL: 45 PERIODS**

#### 16. Text Books and Reference Books:

T1- J.Nagrath and M.Gopal, "Control System Engineering", New Age International Publishers, 6th Edition, 2018.

T2- Benjamin.C.Kuo, "Automatic control systems", Wiley, 9th Edition,2014.

R1- Katsushiko Ogata, "Modern control engineering", Pearson education,5th Edition, 2010.

R2- Schaum's Outline Series, "Feed back and Control Systems" ,Tata McGraw-Hill, 2nd Edition,2013.

R3- A.Nagoorkani, "Control Systems Engineering", RBA publications, First edition,2014.

R4- John J.D Azzo & Constantine H.Houpis, "Linear Control System Analysis and Design", TMH, 1995.

**VIDEO LINKS:**

<https://www.youtube.com/watch?v=FurC2unHeXI>

<https://www.youtube.com/watch?v=5NVjIi9fkY>

<https://www.youtube.com/watch?v=wkfEZmsQqiA>

[https://www.youtube.com/watch?v=IRdDcSO\\_fQw&list=PLBlNk6fEyqRhqzJT87LsdQKYZBC93ezDo&index=23](https://www.youtube.com/watch?v=IRdDcSO_fQw&list=PLBlNk6fEyqRhqzJT87LsdQKYZBC93ezDo&index=23)

**17. Course Plan:**

| S.No              | Topic   | Text/Ref Book | Time Required | Teaching Methods | Teaching Aids | Delivery |        |
|-------------------|---|---------------|---------------|------------------|---------------|----------|--------|
|                   |   |               |               |                  |               | Date     | Period |
| <b>UNIT I</b>     |   |               |               |                  |               |          |        |
| <b>GROUP - I</b>  |   |               |               |                  |               |          |        |
| 1                 | Basic components of Control System                        | T1,R1,R3      | 1             | PPT              | Presentation  |          |        |
| 2                 | Open loop and Closed loop systems                         | T1,R1,R3      | 1             | Video reference  | Youtube       |          |        |
| 3                 | Introduction to Differential equation - Transfer function | T1,R1,R3      | 1             | PPT              | Presentation  |          |        |
| <b>GROUP - II</b> |   |               |               |                  |               |          |        |
| 5                 | Modeling of Electrical and Mechanical systems             | T1,R1,R3      | 1             | PPT              | Presentation  |          |        |
| 6                 | Block diagram reduction                                   | T1,R1,R3      | 1             | Quiz             | Kahoot        |          |        |

|   | methods  |               |               |                     |               |          |        |
|---|--|---------------|---------------|---------------------|---------------|----------|--------|
| 7   | Signal flow graph  | T1,R1,R3      | 1             | Quiz                | Kahoot        |          |        |
| <b>GROUP - III</b>  |  |               |               |                     |               |          |        |
| 8   | <b>Experimental study -Digital simulation of linear systems.</b> |               | 3             | Simulation software | MATLAB        |          |        |
| Planned date of completion of Unit:<br>Actual date of completion of Unit: |  |               |               |                     |               |          |        |
| S.No  | Topic  | Text/Ref Book | Time Required | Teaching Methods    | Teaching Aids | Delivery |        |
|   |  |               |               |                     |               | Date     | Period |
| <b>UNIT II</b>  |  |               |               |                     |               |          |        |
| <b>GROUP - 1</b>  |  |               |               |                     |               |          |        |
| 1   | Time response  | T1,R1,R3      | 1             | PPT                 | canva         |          |        |
| 2   | Order and Type of the Systems                                    | T1,R1,R3      |               | PPT                 | canva         |          |        |
| 3   | Standard test signals  | T1,R1,R3      |               | PPT                 | canva         |          |        |
| <b>GROUP - II</b>   |  |               |               |                     |               |          |        |
| 5   | Unit step Response analysis of first order system                | T1,R1,R3      | 1             | Flipped Classroom   | PPT           |          |        |
| 6   | second order systems   | T1,R1,R3      | 1             | Flipped Classroom   | PPT           |          |        |
| 7   | Time domain specifications                                       | T1,R1,R3      | 1             | Flipped Classroom   | PPT           |          |        |
| <b>GROUP - III</b>  |  |               |               |                     |               |          |        |
| 9   | Steady state errors  | T1,R1,R3      | 1             | Flipped Classroom   | PPT           |          |        |
| 10  | Introduction to P, PI, PD and PID controllers                    | T1,R1,R3      | 1             | Flipped Classroom   | PPT           |          |        |
| 11  | <b>Experimental study- Response of Proportional</b>              |               | 3             | Simulation software | MATLAB        |          |        |

|   | <b>controllers</b>  |               |               |                     |                |          |        |
|---|---|---------------|---------------|---------------------|----------------|----------|--------|
| <b>Planned date of completion of Unit:</b><br><b>Actual date of completion of Unit:</b> |   |               |               |                     |                |          |        |
| S.No  | Topic   | Text/Ref Book | Time Required | Teaching Methods    | Teaching Aids  | Delivery |        |
|   |   |               |               |                     |                | Date     | Period |
| <b>UNIT III</b>   |   |               |               |                     |                |          |        |
| <b>GROUP - I</b>  |   |               |               |                     |                |          |        |
| 1   | Frequency Response  | T1,R1,R3      | 1             | Quiz                | Polling method |          |        |
| 2   | Frequency Domain specifications                                 | T1,R1,R3      | 1             | Quiz                | Google forms   |          |        |
| 3   | Bode Plot   | T1,R1,R3      | 1             | Quiz                | Quizz          |          |        |
| <b>GROUP - II</b>   |   |               |               |                     |                |          |        |
| 5   | Polar Plot  | T1,R1,R3      | 1             | Flipped Classroom   | PPT            |          |        |
| 6   | Constant M and N Circles  | T1,R1,R3      | 1             | Flipped Classroom   | PPT            |          |        |
| <b>GROUP - III</b>  |   |               |               |                     |                |          |        |
| 9   | Introduction to P, PI, PD and PID controllers.                  | T1,R1,R3      | 1             | Flipped Classroom   | PPT            |          |        |
| 10  | <b>Experimental study- Response of Proportional controllers</b> |               |               | Simulation software | MATLAB         |          |        |
| <b>Planned date of completion of Unit:</b><br><b>Actual date of completion of Unit:</b> |   |               |               |                     |                |          |        |
| S.No  | Topic   | Text/Ref Book | Time Required | Teaching Methods    | Teaching Aids  | Delivery |        |
|   |   |               |               |                     |                | Date     | Period |
| <b>UNIT IV</b>  |   |               |               |                     |                |          |        |
| <b>GROUP - I</b>  |   |               |               |                     |                |          |        |
| 1   | BIBO Stability  | T1,R1,R3      | 1             | Presentation        | PPT            |          |        |
| 2   | Routh-Hurwitz Criterion   | T1,R1,R3      | 1             | Presentation        | PPT,Quizziz    |          |        |
| <b>GROUP - II</b>   |   |               |               |                     |                |          |        |
| 5   | Root Locus  | T1,R1,R3      | 1             | Presentation        | PPT            |          |        |

|   | Technique  |               |               |                     |               |          |        |
|---|--|---------------|---------------|---------------------|---------------|----------|--------|
| 6   | Construction of Root Locus, Diagram  | T1,R1,R3      | 1             | Presentation        | PPT           |          |        |
| 7   | Application of Root Locus  | T1,R1,R3      | 1             | Quiz                | Kahoot        |          |        |
| <b>GROUP - III</b>  |  |               |               |                     |               |          |        |
| 9   | Nyquist Stability Criterion  | T1,R1,R3      | 1             | Presentation        | PPT           |          |        |
| 10  | <b>Experimental study- Stability analysis of linear system using root locus.</b> |               | 3             | Simulation software | MATLAB        |          |        |
| Planned date of completion of Unit:<br>Actual date of completion of Unit: |  |               |               |                     |               |          |        |
| S.No  | Topic  | Text/Ref Book | Time Required | Teaching Methods    | Teaching Aids | Delivery |        |
|   |  |               |               |                     |               | Date     | Period |
| <b>UNIT V</b>   |  |               |               |                     |               |          |        |
| <b>GROUP - I</b>  |  |               |               |                     |               |          |        |
| 1   | State space representation of Continuous Time systems                            | T1,R1,R3      | 1             | Presentation        | PPT           |          |        |
| 2   | State equations  | T1,R1,R3      | 1             | Presentation        | PPT           |          |        |
| 3   | Physical, Phase and Canonical variable forms-                                    | T1,R1,R3      | 1             | Presentation        | PPT, Kahoot   |          |        |
| <b>GROUP - II</b>   |  |               |               |                     |               |          |        |
| 5   | Transfer function from State Variable Representation                             | T1,R1,R3      | 1             | Presentation        | PPT           |          |        |
| 6   | Concepts of Controllability and Observability                                    | T1,R1,R3      | 2             | Presentation        | PPT, Kahoot   |          |        |

| <b>GROUP - III</b>                  |   |  |   |                     |        |  |  |
|-------------------------------------|---|--|---|---------------------|--------|--|--|
| 9                                   | <b>Experimental study- State space representation of Continuous Time systems.</b> |  | 3 | Simulation software | MATLAB |  |  |
| Planned date of completion of Unit: |   |  |   |                     |        |  |  |
| Actual date of completion of Unit:  |   |  |   |                     |        |  |  |

| <b>S.No</b>  | <b>Name of the topic</b>   | <b>No of Hours</b> | <b>cum Hours</b> | <b>Text/ Reference books</b> |
|--|--|--------------------|------------------|------------------------------|
| <b>UNIT I – MATHEMATICAL MODELING OF CONTROL SYSTEMS</b> |  |                    |                  |                              |
| 1  | Basic components of Control System – Open loop and Closed loop systems | 1                  | 1                | T1,T2,R1,R2,R3               |
| 2  | Introduction to Differential equation - Transfer function.             | 1                  | 2                | T1,T2,R1,R2,R3               |
| 3  | Modeling of Electrical and Mechanical systems                          | 1                  | 3                | T1,T2,R1,R2,R3               |
| 4  | Block diagram reduction methods  | 3                  | 6                | T1,T2,R1,R2,R3               |
| 5  | Signal flow graph.   | 3                  | 9                | T1,T2,R1,R2,R3               |
| <b>UNIT II TIME RESPONSE ANALYSIS</b>                    |  |                    |                  |                              |
| 6  | Time response.   | 1                  | 10               | T1,T2,R1,R2,R3               |
| 7  | Order and Type of the Systems.   | 1                  | 11               | T1,T2,R1,R2,R3               |
| 8  | Standard test signals.   | 1                  | 12               | T1,T2,R1,R2,R3               |
| 9  | Unit step Response analysis of first and second order systems.         | 3                  | 15               | T1,T2,R1,R2,R3               |
| 10   | Time domain specifications.  | 1                  | 16               | T1,T2,R1,R2,R3               |
| 11   | Steady state errors.   | 1                  | 17               | T1,T2,R1,R2,R3               |
| 12   | Introduction to P, PI, PD and PID controllers                          | 1                  | 18               | T1,T2,R1,R2,R3               |
| <b>UNIT III FREQUENCY RESPONSE ANALYSIS</b>              |  |                    |                  |                              |
| 13   | Frequency Response, Frequency Domain specifications.                   | 1                  | 19               | T1,T2,R1,R2,R3, R5           |
| 14   | Bode Plot, Polar Plot.   | 3                  | 22               | T1,T2,R1,R2,R3, R5           |

|                                       |  |   |    |                    |
|---------------------------------------|--|---|----|--------------------|
| 15                                    | Constant M and N Circles.  | 2 | 24 | T1,T2,R1,R2,R3, R5 |
| 16                                    | Nichols chart.   | 2 | 26 | T1,T2,R1,R2,R3, R5 |
| 17                                    | Introduction to Lead, Lag, and Lead Lag Compensators.                  | 1 | 27 | T1,T2,R1,R2,R3, R5 |
| <b>UNIT IV STABILITY ANALYSIS</b>     |  |   |    |                    |
| 18                                    | BIBO Stability,  | 1 | 28 | T1,T2,R1,R2,R3, R5 |
| 19                                    | Routh-Hurwitz Criterion.   | 2 | 30 | T1,T2,R1,R2,R3, R5 |
| 20                                    | Root Locus Technique- Construction of Root Locus.                      | 3 | 33 | T1,T2,R1,R2,R3, R5 |
| 21                                    | Application of Root Locus Diagram.                                     | 1 | 34 | T1,T2,R1,R2,R3, R5 |
| 22                                    | Nyquist Stability Criterion.   | 2 | 36 | T1,T2,R1,R2,R3,R5  |
| <b>UNIT V STATE VARIABLE ANALYSIS</b> |  |   |    |                    |
| 23                                    | State space representation of Continuous Time systems- State equations | 1 | 37 | T1,T2,R1,R2,R3,R4  |
| 24                                    | Physical, Phase and Canonical variable forms                           | 2 | 39 | T1,T2,R1,R2,R3,R4  |
| 25                                    | Transfer function from State Variable Representation                   | 3 | 42 | T1,T2,R1,R2,R3,R4  |
| 26                                    | Concepts of Controllability and Observability                          | 2 | 45 | T1,T2,R1,R2,R3,R4  |

**Total No. of Lecture Hours: 45**

**18. Weightage of Unit Contents:**

Factors considered,

- F1 - Number of periods allotted for teaching the unit and weightage per hour is equal to 1
- F2 - Usefulness of the content matter of the unit in the student's learning point of view and its weightage is equal to 1 if useful otherwise zero
- F3 - Usefulness of the content matter of the unit in understanding other units of the same subject and its weightage is equal to 1 if useful otherwise zero
- F4 - Usefulness of the content matter of the unit in understanding other subjects prescribed for the programme and its weightage is equal to 1 if useful otherwise zero

| Topic   | F <sub>1</sub> | F <sub>2</sub> | F <sub>3</sub> | F <sub>4</sub> | A <sub>1</sub> | A <sub>2</sub> |
|---|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>Unit- I MATHEMATICAL MODELING OF CONTROL SYSTEMS</b> |                |                |                |                | (Weightage)    | (%)            |
| Basic components of Control System – Open               | 9              | 1              | 1              | 0              | 21             | 24.72          |

|   |   |   |   |   |    |       |
|---|---|---|---|---|----|-------|
| loop and Closed loop systems.   |   |   |   |   |    |       |
| Introduction to Differential equation - Transfer function.              |   | 1 | 1 | 1 |    |       |
| Modeling of Electrical and Mechanical Systems.                          |   | 1 | 1 | 0 |    |       |
| Block diagram reduction methods.  |   | 1 | 1 | 0 |    |       |
| Signal flow graph.  |   | 1 | 1 | 1 |    |       |
| <b>Unit – II TIME RESPONSE ANALYSIS</b>                                 |   |   |   |   |    |       |
| Time response. Order and Type of the Systems. Standard test signals.    | 9 | 1 | 1 | 0 | 17 | 20    |
| Unit step Response analysis of first and second order systems.          |   | 1 | 0 | 0 |    |       |
| Time domain specifications. Steady state errors.                        |   | 1 | 1 | 0 |    |       |
| Introduction to P, PI, PD and PID controllers                           |   | 1 | 1 | 1 |    |       |
| <b>UNIT III FREQUENCY RESPONSE ANALYSIS</b>                             |   |   |   |   |    |       |
| Frequency Response, Frequency Domain specifications.                    | 9 | 1 | 1 | 0 | 16 | 18.82 |
| Bode Plot, Polar Plot.  |   | 1 | 1 | 0 |    |       |
| Constant M and N Circles.   |   | 1 | 0 | 0 |    |       |
| Nichols chart. Introduction to Lead, Lag, and Lead Lag Compensators.    |   | 1 | 1 | 0 |    |       |
| <b>UNIT IV STABILITY ANALYSIS</b>                                       |   |   |   |   |    |       |
| BIBO Stability.   | 9 | 1 | 0 | 1 | 16 | 18.82 |
| Routh-Hurwitz Criterion.  |   | 1 | 0 | 0 |    |       |
| Root Locus Technique- Construction of Root Locus.                       |   | 1 | 1 | 0 |    |       |
| Application of Root Locus Diagram. Nyquist Stability Criterion.         |   | 1 | 1 | 0 |    |       |
| <b>UNIT V STATE VARIABLE ANALYSIS</b>                                   |   |   |   |   |    |       |
| State space representation of Continuous Time systems- State equations. | 9 | 1 | 0 | 0 | 15 | 17.64 |
| Physical, Phase and Canonical variable forms.                           |   | 1 | 1 | 0 |    |       |
| Transfer function from State Variable Representation.                   |   | 1 | 1 | 0 |    |       |
| Concepts of Controllability and Observability.                          |   | 1 | 0 | 0 |    |       |

|                                       |           |             |
|---------------------------------------|-----------|-------------|
|                                       | <b>85</b> | <b>100%</b> |
| <b>A<sub>2</sub> - % of Weightage</b> |           |             |

**19. Mapping Syllabus with Bloom's Taxonomy LOT and HOT:**

| <b>Lower Order Thinking</b>  |               |  |
|------------------------------|---------------|--|
| R                            | Remembering   | Students are expected to <b>Recall</b> the information through recognizing, listing, describing, retrieving, naming, finding   |
| U                            | Understanding | Students are expected to <b>Explain</b> an ideas or concepts through Interpreting, summarizing, paraphrasing, classifying, explaining  |
| Ap                           | Applying      | Students are expected to <b>Use</b> the information in another familiar situation through implementing, carrying out, using, executing   |
| <b>Higher Order Thinking</b> |               |  |
| A                            | Analyzing     | Students are expected to <b>Break</b> the information into parts to explore understandings and relationships through comparing, organizing, deconstructing, interrogating, finding |
| E                            | Evaluating    | Students are expected to <b>Evaluate</b> the justifying a decision or course of action through checking, hypothesizing, experimenting, judging                                     |
| C                            | Creating      | Students are expected to <b>Generate</b> new ideas, products, or ways of viewing things through Designing, constructing, planning, producing, inventing.                           |

| <b>Unit - I MATHEMATICAL MODELING OF CONTROL SYSTEMS (Weightage 24.72%)</b> |   |                     |             |             |                      |          |          |              |
|---|---|---------------------|-------------|-------------|----------------------|----------|----------|--------------|
| Sl.No   | Name of the Topic   | Process verb        |             |             | Types of thinking    |          |          |              |
| 1   | Basic components of Control System - Open loop and Closed loop systems. | Retrieve            |             |             | Remembering<br>CO1   |          |          |              |
| 2   | Introduction to Differential equation - Transfer function.              | Retrieve            |             |             | Remembering<br>CO1   |          |          |              |
| 3   | Modeling of Electrical and Mechanical Systems.                          | Interpret           |             |             | Understanding<br>CO1 |          |          |              |
| 4   | Block diagram reduction methods.  | Implementing        |             |             | Applying<br>CO1      |          |          |              |
| 5   | Signal flow graph.  | Relate /Correlation |             |             | Understanding<br>CO1 |          |          |              |
|   |   | <b>R</b>            | <b>U</b>    | <b>Ap</b>   | <b>A</b>             | <b>E</b> | <b>C</b> | <b>Total</b> |
|   | Type of thinking in Nos   | 2                   | 2           | 1           | 0                    | 0        | 0        | 5            |
|   | <b>Weightage, %</b>   | <b>9.89</b>         | <b>9.89</b> | <b>4.94</b> | <b>0</b>             | <b>0</b> | <b>0</b> | <b>24.72</b> |

| <b>Unit – II TIME RESPONSE ANALYSIS (Weightage 20%)</b>          |  |              |             |              |                             |          |          |               |
|--|--|--------------|-------------|--------------|-----------------------------|----------|----------|---------------|
| Sl.No  | Name of the Topic  | Process verb |             |              | Types of thinking           |          |          |               |
| 1  | Time response. Order and Type of the Systems. Standard test signals. | Explain      |             |              | Understanding<br><b>C02</b> |          |          |               |
| 2  | Unit step Response analysis of first and second order systems.       | Interpret    |             |              | Understanding<br><b>C02</b> |          |          |               |
| 3  | Time domain specifications. Steady state errors.                     | Describe     |             |              | Remembering<br><b>C02</b>   |          |          |               |
| 4  | Introduction to P, PI, PD and PID controllers                        | Describe     |             |              | Remembering<br><b>C02</b>   |          |          |               |
|  |  | <b>R</b>     | <b>U</b>    | <b>Ap</b>    | <b>A</b>                    | <b>E</b> | <b>C</b> | <b>Total</b>  |
| Type of thinking in Nos  |  | 2            | 2           | 0            | 0                           | 0        | 0        | 4             |
| <b>Weightage,%</b>   |  | <b>10</b>    | <b>10</b>   | <b>0</b>     | <b>0</b>                    | <b>0</b> | <b>0</b> | <b>20</b>     |
| <b>Unit – III FREQUENCY RESPONSE ANALYSIS (Weightage 18.82%)</b> |  |              |             |              |                             |          |          |               |
| Sl.No  | Name of the Topic  | Process verb |             |              | Types of thinking           |          |          |               |
| 1  | Frequency Response, Frequency Domain specifications.                 | Describe     |             |              | Remembering<br>C03          |          |          |               |
| 2  | Bode Plot, Polar Plot.   | Implementing |             |              | Applying<br>C03             |          |          |               |
| 3  | Constant M and N Circles.  | Explain      |             |              | Understanding<br>C03        |          |          |               |
| 4  | Nichols chart. Introduction to Lead, Lag, and Lead Lag Compensators. | Interpret    |             |              | Understanding<br>C03        |          |          |               |
|  |  | <b>R</b>     | <b>U</b>    | <b>Ap</b>    | <b>A</b>                    | <b>E</b> | <b>C</b> | <b>Total</b>  |
| Type of thinking in Nos  |  | 1            | 2           | 1            | 0                           | 0        | 0        | 4             |
| <b>Weightage,%</b>   |  | <b>4.705</b> | <b>9.41</b> | <b>4.705</b> | <b>0</b>                    | <b>0</b> | <b>0</b> | <b>18.82%</b> |
| <b>Unit – IV STABILITY ANALYSIS (Weightage 18.82%)</b>           |  |              |             |              |                             |          |          |               |
| Sl.No  | Name of the Topic  | Process verb |             |              | Types of thinking           |          |          |               |
| 1  | BIBO Stability   | Explain      |             |              | Understanding<br>C04        |          |          |               |
| 2  | Routh-Hurwitz Criterion.   | Implementing |             |              | Applying<br>C04             |          |          |               |
| 3  | Root Locus Technique- Construction of Root Locus.                    | Implementing |             |              | Applying<br>C04             |          |          |               |
| 4  | Application of Root Locus Diagram. Nyquist Stability Criterion.      | Explain      |             |              | Understanding<br>C04        |          |          |               |
|  |  | <b>R</b>     | <b>U</b>    | <b>Ap</b>    | <b>A</b>                    | <b>E</b> | <b>C</b> | <b>Total</b>  |

|  |  |             |             |              |          |                      |               |
|--|--|-------------|-------------|--------------|----------|----------------------|---------------|
| Type of thinking in Nos                                    | 0  | 2           | 2           | 0            | 0        | 0                    | 4             |
| <b>Weightage,%</b>   | <b>0</b>   | <b>9.41</b> | <b>9.41</b> | <b>0</b>     | <b>0</b> | <b>0</b>             | <b>18.82%</b> |
| <b>Unit-V – STATE VARIABLE ANALYSIS (Weightage 17.64%)</b> |  |             |             |              |          |                      |               |
| Sl.No  | Name of the Topic  |             |             | Process verb |          | Types of thinking    |               |
| 1  | State space representation of Continuous Time systems- State equations |             |             | Describe     |          | Remembering<br>C05   |               |
| 2  | Physical, Phase and Canonical variable forms                           |             |             | Describe     |          | Remembering<br>C05   |               |
| 3  | Transfer function from State Variable Representation                   |             |             | using        |          | Applying<br>C05      |               |
| 4  | Concepts of Controllability and Observability                          |             |             | Explain      |          | Understanding<br>C05 |               |
|  |  | <b>R</b>    | <b>U</b>    | <b>Ap</b>    | <b>A</b> | <b>E</b>             | <b>C</b>      |
| Type of thinking in Nos                                    |  | 2           | 1           | 1            | 0        | 0                    | 0             |
| <b>Weightage,%</b>   |  | <b>8.82</b> | <b>4.41</b> | <b>4.41</b>  | <b>0</b> | <b>0</b>             | <b>0</b>      |
|  |  |             |             |              |          |                      | <b>Total</b>  |
|  |  |             |             |              |          |                      | 4             |
|  |  |             |             |              |          |                      | <b>17.64%</b> |

|                              | <b>R</b>      | <b>U</b>     | <b>AP</b>     | <b>A</b>     | <b>E</b> | <b>C</b> | <b>TOTAL</b>  |
|------------------------------|---------------|--------------|---------------|--------------|----------|----------|---------------|
| <b>UNIT 1</b>                | <b>9.89</b>   | <b>9.89</b>  | <b>4.94</b>   | <b>0</b>     | <b>0</b> | <b>0</b> | <b>24.72</b>  |
| <b>UNIT 2</b>                | <b>10</b>     | <b>10</b>    | <b>0</b>      | <b>0</b>     | <b>0</b> | <b>0</b> | <b>20</b>     |
| <b>UNIT 3</b>                | <b>4.705</b>  | <b>9.41</b>  | <b>4.705</b>  | <b>0</b>     | <b>0</b> | <b>0</b> | <b>18.82%</b> |
| <b>UNIT 4</b>                | <b>0</b>      | <b>9.41</b>  | <b>9.41</b>   | <b>0</b>     | <b>0</b> | <b>0</b> | <b>18.82%</b> |
| <b>UNIT 5</b>                | <b>8.82</b>   | <b>4.41</b>  | <b>4.41</b>   | <b>0</b>     | <b>0</b> | <b>0</b> | <b>17.64%</b> |
| <b>TOTAL</b>                 | <b>33.415</b> | <b>43.12</b> | <b>23.465</b> | <b>0</b>     | <b>0</b> | <b>0</b> | <b>100 %</b>  |
| <b>Lower Order Thinking</b>  |               |              |               | <b>100 %</b> |          |          |               |
| <b>Higher Order Thinking</b> |               |              |               | <b>0 %</b>   |          |          |               |

## 20. Correlation between Course Outcome with Bloom's Taxonomy LOT and HOT:

|            | <b>R</b> | <b>U</b> | <b>Ap</b> | <b>A</b> | <b>E</b> | <b>C</b> |
|------------|----------|----------|-----------|----------|----------|----------|
| <b>C01</b> | ✓✓       | ✓✓       | ✓         |          |          |          |
| <b>C02</b> | ✓✓       | ✓✓       |           |          |          |          |
| <b>C03</b> | ✓        | ✓✓       | ✓         |          |          |          |
| <b>C04</b> |          | ✓✓       | ✓✓        |          |          |          |
| <b>C05</b> | ✓✓       | ✓        | ✓         |          |          |          |

**21. Mapping of Course Outcomes with Program Outcomes (Pos) and Program Specific Outcomes (PSOs):  
Programme Outcomes**

| <b>POs</b>  | <b>Program Outcomes</b>                    | <b>Descriptions</b>  |
|-------------|--|--|
| <b>P01</b>  | Engineering Knowledge                      | Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.  |
| <b>P02</b>  | Problem Analysis                           | Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences.  |
| <b>P03</b>  | Design/Development of Solutions            | Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.                           |
| <b>P04</b>  | Conduct Investigations on Complex Problems | Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.   |
| <b>P05</b>  | Modern Tool Usage                          | Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.   |
| <b>P06</b>  | The Engineer and Society                   | Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice   |
| <b>P07</b>  | Environment and sustainability             | Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.  |
| <b>P08</b>  | Ethics                                     | Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.   |
| <b>P09</b>  | Individual and Team Work                   | Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.  |
| <b>P010</b> | Communication                              | Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions. |

|             |                                |  |
|-------------|--------------------------------|--|
| <b>P011</b> | Project Management and Finance | Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments |
| <b>P012</b> | Life-long learning             | Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.  |

### Program Specific Outcomes:

**PSO1:** Graduates will be able to provide solutions for real time embedded systems using Internet of Things to meet the global needs.

**PSO2:** Graduates will have the perseverance to design and develop product using cutting edge technologies in Signal processing and Communication systems.

| PO & PSO   | P01 | P02 | P03 | P04 | P05 | P06 | P07 | P08 | P09 | P010 | P011 | P012 | PSO1 | PSO2 |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| <b>CO1</b> | 3   | 2   | 2   | 3   | 2   | 3   | 2   | -   | -   | -    | -    | -    | 2    | 3    |
| <b>CO2</b> | 3   | 3   | 3   | 3   | 2   | 2   | 2   | -   | -   | -    | -    | -    | 2    | 2    |
| <b>CO3</b> | 3   | 2   | 2   | 3   | 2   | 2   | 2   | -   | -   | -    | -    | -    | 2    | -    |
| <b>CO4</b> | 3   | 3   | 3   | 2   | 2   | 2   | 2   | -   | -   | -    | -    | -    | -    | 3    |
| <b>CO5</b> | 3   | 2   | 2   | 2   | 2   | 3   | 2   | -   | -   | -    | -    | -    | 2    | -    |

|          |                   |          |                       |          |                  |
|----------|-------------------|----------|-----------------------|----------|------------------|
| <b>3</b> | <b>High Level</b> | <b>2</b> | <b>Moderate Level</b> | <b>1</b> | <b>Low Level</b> |
|----------|-------------------|----------|-----------------------|----------|------------------|

### 22. Mapping with Programme Educational Objectives:

Preparing the graduates to,

1. PEO 1: To prepare the graduates to solve, analyze and develop real time engineering products by providing strong foundation in the fundamentals of Electronics and Communication Engineering.
2. PEO 2: To prepare the graduates to succeed in multidisciplinary dimensions by providing adequate trainings and exposure in emerging technologies.
3. PEO 3: To prepare the graduates to become a successful leader and innovator following ethics with the sense of social responsibility for providing engineering solutions.

| Course          | PEO1       | PEO2           | PEO3       |
|-----------------|------------|----------------|------------|
| Control Systems | High Level | Moderate Level | High Level |

|   |            |   |                |   |           |
|---|------------|---|----------------|---|-----------|
| 3 | High Level | 2 | Moderate Level | 1 | Low Level |
|---|------------|---|----------------|---|-----------|

### 23. Course Assessment Methods:

#### Monthly test: 15 Marks

|                   |  |
|-------------------|--|
| <b>Objective</b>  | To Identify What Students Have Learned and also to identify students strength and weakness   |
| <b>Product</b>    | Answer scripts   |
| <b>Frequency</b>  | Monthly  |
| <b>Format</b>     | Part -A 6 x 2 = 12 Marks<br>Part -B 2 x 14 = 28 Marks<br>Part - C 1 x 10 = 10 Marks<br>Total marks= 50<br>Duration : 1 Hour and 30 Minutes |
| <b>Evaluation</b> | Based on answer given in the scripts   |
| <b>criteria</b>   | Pass mark – 50%<br>Minimum pass percentage: 75%<br>If not, remedial action will be taken.  |

#### Assignment: 5 marks

|                   |   |
|-------------------|---|
| <b>Objective</b>  | To enhance students' understanding of a particular reading          |
| <b>Product</b>    | Hand written assignment/tutorial sheets                             |
| <b>Frequency</b>  | After completing one unit   |
| <b>Format</b>     | Important questions from each units                                 |
| <b>Evaluation</b> | Based on rubrics  |
| <b>Criteria</b>   | No. of assignments: 3<br>Submit on or before the date of submission |

#### Attendance: 5 marks

|                   |   |              |     |         |     |         |     |         |     |              |   |
|-------------------|---|--------------|-----|---------|-----|---------|-----|---------|-----|--------------|---|
| <b>Objective</b>  | To make all students to attend the class throughout the course  |              |     |         |     |         |     |         |     |              |   |
| <b>Product</b>    | Record of class work  |              |     |         |     |         |     |         |     |              |   |
| <b>Frequency</b>  | All working days  |              |     |         |     |         |     |         |     |              |   |
| <b>Format</b>     | Record of class work format   |              |     |         |     |         |     |         |     |              |   |
| <b>Evaluation</b> | Based on attendance earned by the students  |              |     |         |     |         |     |         |     |              |   |
| <b>Criteria</b>   | Marks will be awarded according to attendance percentage of students.<br><table style="margin-left: 20px;"> <tr> <td>91 and above</td> <td>5.0</td> </tr> <tr> <td>86 – 90</td> <td>4.0</td> </tr> <tr> <td>81 – 85</td> <td>3.0</td> </tr> <tr> <td>75 – 80</td> <td>2.0</td> </tr> <tr> <td>Less than 75</td> <td>0</td> </tr> </table> | 91 and above | 5.0 | 86 – 90 | 4.0 | 81 – 85 | 3.0 | 75 – 80 | 2.0 | Less than 75 | 0 |
| 91 and above      | 5.0   |              |     |         |     |         |     |         |     |              |   |
| 86 – 90           | 4.0   |              |     |         |     |         |     |         |     |              |   |
| 81 – 85           | 3.0   |              |     |         |     |         |     |         |     |              |   |
| 75 – 80           | 2.0   |              |     |         |     |         |     |         |     |              |   |
| Less than 75      | 0   |              |     |         |     |         |     |         |     |              |   |

**End semester exam: 50 marks**

|                   |  |
|-------------------|--|
| <b>Objective</b>  | To assess the each student's knowledge of the course   |
| <b>Product</b>    | Result analysis  |
| <b>Frequency</b>  | Semester   |
| <b>Format</b>     | Part -A 10 x 2= 20 marks<br>Part -B 5 x 14= 70 marks<br>Part - C 1 x 10 = 10 Marks<br>Total marks= 100<br>Duration : 3 Hours |
| <b>Evaluation</b> | Based on answer given in the scripts   |
| <b>criteria</b>   | Minimum pass percentage: 75%<br>If not, remedial action will be taken.   |

**Laboratory Internal Assessment: 25 marks**

|                   |  |
|-------------------|--|
| <b>Objective</b>  | To assess the each student's Practical knowledge of the course               |
| <b>Product</b>    | Result analysis  |
| <b>Frequency</b>  | Semester   |
| <b>Format</b>     | Practical Model Exam<br>Total marks= 100 reduced to 25<br>Duration : 3 Hours |
| <b>Evaluation</b> | Based on answer given in the scripts   |
| <b>criteria</b>   | Minimum pass percentage: 75%<br>If not, remedial action will be taken.       |

Faculty in-charge

HOD/ECE

DEAN-Academics

## *ANNEXURE II*

| ENTRY MAPPING OF COs and POs: |     |     |     |     |     |     |     |     |     |      |      |      |       |       |
|-------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|-------|-------|
| CO/PO                         | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO-1 | PSO-2 |
| CO1                           | 3   | -   | 2   | 1   | 2   | 2   | -   | -   | 2   | -    | -    | 2    | 3     | 2     |
| CO2                           | 3   | 3   | 3   | 3   | 2   | 3   | -   | -   | 2   | -    | -    | 2    | 3     | 2     |
| CO3                           | 3   | 2   | 3   | 3   | 2   | 2   | -   | -   | 2   | -    | -    | 2    | 3     | 2     |
| CO4                           | 3   | 3   | 2   | 2   | 2   | 2   | -   | -   | 2   | -    | -    | 2    | 3     | 2     |
| CO5                           | 3   | 2   | 2   | 2   | 2   | 3   | -   | -   | 2   | -    | -    | 2    | 2     | 2     |
| AVG                           | 3   | 2.5 | 2.4 | 2.2 | 2   | 2.4 | -   | -   | 2   | -    | -    | 2    | 2.8   | 2     |

| Indirect Survey |               |          |          |              |
|-----------------|---------------|----------|----------|--------------|
| CO              | Excellent (3) | Good (2) | Poor (1) | Percentage % |
| CO1             | 38            | 9        | 0        | 93.67        |
| CO2             | 30            | 14       | 3        | 85.67        |
| CO3             | 39            | 8        | 0        | 94.33        |
| CO4             | 37            | 10       | 0        | 93           |
| CO5             | 35            | 11       | 1        | 90.67        |
|                 |               |          |          |              |

|   |   |
|---|---|
| COURSE NAME & CODE                      | 16EC6203 / DIGITAL IMAGE PROCESSING                     |
| SECTION                                 | A   |
| Name of the Faculty                     | J.RAMYA   |
| Department                              | DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING |
| Batch                                   | 2016-2020   |
| Question Expected Level of Attainment - | 50%   |
|   | No of students scores upto expected level               |
|   | % of scoring above the attainment level                 |

Faculty Signature  
[ J.RAMYA ]

HOD  
[ Dr.P.Rajeswari ]

DEAN-ACADEMICS  
[Dr. MAGUDESWARAN P N]





## HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY

Valley Campus, Pollachi Highway, Coimbatore - 641032

### DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

#### I INTERNAL TEST

Each Question Expected Level of Attainment - 50%

COURSE NAME & CODE : 16EC6203 / DIGITAL IMAGE PROCESSING

Batch : 2016-2020

SECTION : A

Total Strength : 10

Name of the Faculty : J.RAMYA

Total Attended : 10

| S.No  | REG.No.  | Name                           | Q1           | Q2                    | Q3           | Q4           | Q5           | Q6                  | Q7/Q8        | Q9/Q10       | Q11/Q12      | Test Score |
|---|----------|--------------------------------|--------------|-----------------------|--------------|--------------|--------------|---------------------|--------------|--------------|--------------|------------|
|   |          |                                | 2            | 2                     | 2            | 2            | 2            | 2                   | 2            | 14           | 14           |            |
| Expected Marks to Attainment                        |          |                                | 1.0          | 1.0                   | 1.0          | 1.0          | 1.0          | 1.0                 | 7.0          | 7.0          | 5.0          |            |
| 1   | 16106001 | AARTHI GR                      | 2            |                       | 1            | 0            | 1            |                     | 13           |              | 2            | 19         |
| 2   | 16106002 | ABHINANDH M                    | 2            | 2                     |              | 2            |              | 1                   | 14           | 7            | 8            | 36         |
| 3   | 16106003 | ABHIVARNA C                    | 2            | 1                     |              | 0            | 1            | 1                   | 13           |              |              | 18         |
| 4   | 16106004 | ABISHA.B                       | 2            | 1                     | 2            | 2            |              |                     | 14           | 2            | 8            | 31         |
| 5   | 16106005 | ADITHYA                        |              |                       |              |              |              |                     | 11           | 7            | 3            | 21         |
| 6   | 16106006 | AKHAASH A                      | 1            | 0                     |              | 1            |              |                     |              |              |              | 2          |
| 7   | 16106007 | AMISHA VERMA                   | 2            | 2                     |              | 2            |              | 2                   | 14           | 13           | 0            | 35         |
| 8   | 16106009 | ARAVINDRAJ G                   | 1            | 0                     |              |              |              |                     | 7            | 8            | 4            | 20         |
| 9   | 16106011 | ARUN I                         | 2            | 2                     |              | 2            | 2            | 2                   | 14           | 4            | 9            | 37         |
| 10  | 16106803 | MAHENDRAN.P                    | 0            | 0                     |              | 0            | 0            | 0                   | 1            |              |              | 1          |
| Each Question Expected Level of Attainment - ( 50%) |          |                                | <b>8</b>     | <b>5</b>              | <b>2</b>     | <b>5</b>     | <b>3</b>     | <b>4</b>            | <b>8</b>     | <b>4</b>     | <b>3</b>     |            |
| No of students scores upto expected level           |          |                                | <b>80.00</b> | <b>50.00</b>          | <b>20.00</b> | <b>50.00</b> | <b>30.00</b> | <b>40.00</b>        | <b>80.00</b> | <b>40.00</b> | <b>30.00</b> |            |
| Mapping with CO                                     |          |                                | CO1          | CO1                   | CO1          | CO1          | CO2          | CO2                 | CO1          | CO2          | CO1          |            |
| ATTAINMENT LEVEL OF ALL CO                          |          |                                | CO1          |                       | CO2          |              |              |                     |              |              |              |            |
|   |          |                                | <b>51.67</b> | <b>36.67</b>          |              |              |              |                     |              |              |              |            |
| No of Student Passed =                              | 4        | No of Student (Single Digit) = | 2            | Pass Percentage ( % ) |              | 40.00        |              | Total Strength : 10 |              |              |              |            |
| No of Student Failed =                              | 6        | No of Student (Zero) =         | 0            |                       |              |              |              | Total Attended : 10 |              |              |              |            |

Faculty Signature  
[ J.RAMYA ]

HOD  
[ Dr.P.Rajeswari ]

DEAN-ACADEMICS  
[Dr. MAGUESWARAN P.N]



## HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY

Valley Campus, Pollachi Highway, Coimbatore - 641032

### DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

#### II INTERNAL TEST

Each Question Expected Level of Attainment - 50%

COURSE NAME & CODE : 16EC6203 / DIGITAL IMAGE PROCESSING

Batch : 2016-2020

SECTION : A

Total Strength : 10

Name of the Faculty : J.RAMYA

Total Attended : 9

| S.No  | REG.No.  | Name                           | Q1           | Q2                    | Q3           | Q4           | Q5           | Q6                  | Q7/Q8        | Q9/Q10       | Q11/Q12      | Test Score |
|---|----------|--------------------------------|--------------|-----------------------|--------------|--------------|--------------|---------------------|--------------|--------------|--------------|------------|
|   |          |                                | 2            | 2                     | 2            | 2            | 2            | 2                   | 2            | 14           | 14           |            |
| Expected Marks to Attainment                        |          |                                | 1.0          | 1.0                   | 1.0          | 1.0          | 1.0          | 1.0                 | 7.0          | 7.0          | 5.0          |            |
| 1   | 16106001 | AARTHI GR                      |              |                       |              |              | 0            |                     | 12           | 4            | 9            | 25         |
| 2   | 16106002 | ABHINANDH M                    | 2            | 1                     |              | 2            | 0            |                     | 13           | 1            | 9            | 28         |
| 3   | 16106003 | ABHIVARNA C                    | 1            | 1                     | 1            |              | 0            |                     | 13           |              | 9            | 25         |
| 4   | 16106004 | ABISHA.B                       | 0            | 2                     | 2            | 2            |              |                     | 13           | 4            | 9            | 32         |
| 5   | 16106005 | ADITHYA                        | 2            | 2                     |              | 2            | 0            | 2                   | 13           | 7            | 9            | 37         |
| 6   | 16106006 | AKHAASH A                      |              |                       |              |              |              |                     |              |              |              | 0          |
| 7   | 16106007 | AMISHA VERMA                   | 2            | 2                     | 1            | 2            | 1            |                     | 14           | 4            | 9            | 35         |
| 8   | 16106009 | ARAVINDRAJ G                   | 2            | 1                     |              | 2            |              |                     | 14           |              | 9            | 28         |
| 9   | 16106011 | ARUN I                         | 2            | 2                     | 0            | 1            | 1            | 0                   | 14           | 14           | 10           | 44         |
| 10  | 16106803 | MAHENDRAN.P                    | AB           | AB                    | AB           | AB           | AB           | AB                  | AB           | AB           | AB           | AB         |
| Each Question Expected Level of Attainment - ( 50%) |          |                                | <b>6</b>     | <b>7</b>              | <b>3</b>     | <b>6</b>     | <b>2</b>     | <b>1</b>            | <b>8</b>     | <b>2</b>     | <b>8</b>     |            |
| No of students scores upto expected level           |          |                                | <b>66.67</b> | <b>77.78</b>          | <b>33.33</b> | <b>66.67</b> | <b>22.22</b> | <b>11.11</b>        | <b>88.89</b> | <b>22.22</b> | <b>88.89</b> |            |
| Mapping with CO                                     |          |                                | CO2          | CO2                   | CO3          | CO3          | CO3          | CO3                 | CO2          | CO3          | CO3          |            |
| ATTAINMENT LEVEL OF ALL CO                          |          |                                | CO2          |                       | CO3          |              |              |                     |              |              |              |            |
|   |          |                                | <b>72.22</b> |                       | <b>33.33</b> |              |              |                     |              |              |              |            |
| No of Student Passed =                              | 8        | No of Student (Single Digit) = | 1            | Pass Percentage ( % ) |              | 88.89        |              | Total Strength : 10 |              |              |              |            |
| No of Student Failed =                              | 1        | No of Student (Zero) =         | 1            |                       |              |              |              | Total Attended : 9  |              |              |              |            |

Faculty Signature  
[ J.RAMYA ]

HOD  
[ Dr.P.Rajeswari ]

DEAN-ACADEMICS  
[Dr. MAGUESWARAN P.N]



## HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY

Valley Campus, Pollachi Highway, Coimbatore - 641032

### DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

#### III INTERNAL TEST

Each Question Expected Level of Attainment - 50%

COURSE NAME & CODE : 16EC6203 / DIGITAL IMAGE PROCESSING

Batch : 2016-2020

SECTION : A

Total Strength : 10

Name of the Faculty : J.RAMYA

Total Attended : 10

| S.No  | REG.No.  | Name                           | Q1           | Q2                    | Q3           | Q4           | Q5           | Q6                  | Q7/Q8        | Q9/Q10       | Q11/Q12      | Test Score |
|---|----------|--------------------------------|--------------|-----------------------|--------------|--------------|--------------|---------------------|--------------|--------------|--------------|------------|
|   |          |                                | 2            | 2                     | 2            | 2            | 2            | 2                   | 2            | 14           | 14           |            |
| Expected Marks to Attainment                        |          |                                | 1.0          | 1.0                   | 1.0          | 1.0          | 1.0          | 1.0                 | 7.0          | 7.0          | 5.0          |            |
| 1   | 16106001 | AARTHI GR                      | 1            | 0                     | 0            | 1            | 0            | 0                   |              | 7            | 0            | 9          |
| 2   | 16106002 | ABHINANDH M                    |              |                       |              |              |              |                     | 4            | 12           | 1            | 17         |
| 3   | 16106003 | ABHIVARNA C                    | 1            | 1                     |              | 1            | 1            | 0                   | 1            |              |              | 5          |
| 4   | 16106004 | ABISHA.B                       | 2            | 2                     |              | 2            |              |                     | 14           | 10           | 4            | 34         |
| 5   | 16106005 | ADITHYA                        | 2            | 2                     | 0            | 2            | 2            | 1                   | 12           | 7            | 2            | 30         |
| 6   | 16106006 | AKHAASH A                      | 0            |                       |              |              |              |                     |              |              |              | 0          |
| 7   | 16106007 | AMISHA VERMA                   | 2            |                       |              | 2            | 2            | 2                   | 9            | 10           | 8            | 35         |
| 8   | 16106009 | ARAVINDRAJ G                   |              |                       |              |              |              |                     | 2            | 1            |              | 3          |
| 9   | 16106011 | ARUN I                         | 1            | 2                     | 0            | 2            | 2            | 0                   | 10           |              |              | 17         |
| 10  | 16106803 | MAHENDRAN.P                    |              | 0                     | 0            | 0            | 0            | 1                   | 0            |              |              | 1          |
| Each Question Expected Level of Attainment - ( 50%) |          |                                | <b>6</b>     | <b>4</b>              | <b>0</b>     | <b>6</b>     | <b>4</b>     | <b>3</b>            | <b>4</b>     | <b>5</b>     | <b>1</b>     |            |
| No of students scores upto expected level           |          |                                | <b>60.00</b> | <b>40.00</b>          | <b>0.00</b>  | <b>60.00</b> | <b>40.00</b> | <b>30.00</b>        | <b>40.00</b> | <b>50.00</b> | <b>10.00</b> |            |
| Mapping with CO                                     |          |                                | <b>CO4</b>   | <b>CO4</b>            | <b>CO4</b>   | <b>CO5</b>   | <b>CO5</b>   | <b>CO5</b>          | <b>CO4</b>   | <b>CO5</b>   | <b>CO5</b>   |            |
| ATTAINMENT LEVEL OF ALL CO                          |          |                                | CO4          |                       | CO5          |              |              |                     |              |              |              |            |
|   |          |                                | <b>35.00</b> |                       | <b>38.00</b> |              |              |                     |              |              |              |            |
| No of Student Passed =                              | 3        | No of Student (Single Digit) = | 5            | Pass Percentage ( % ) |              | 30.00        |              | Total Strength : 10 |              |              |              |            |
| No of Student Failed =                              | 7        | No of Student (Zero) =         | 1            |                       |              |              |              | Total Attended : 10 |              |              |              |            |

Faculty Signature  
[ J.RAMYA ]

HOD  
[ Dr.P.Rajeswari ]

DEAN-ACADEMICS  
[Dr. MAGUESWARAN P N]



## HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY

Valley Campus, Pollachi Highway, Coimbatore - 641032

### DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

#### MID SEMESTER EXAM

Each Question Expected Level of Attainment - 50%

COURSE NAME & CODE : 16EC6203 / DIGITAL IMAGE PROCESSING

Batch : 2016-2020

SECTION : A

Total Strength : 10

Name of the Faculty : J.RAMYA

Total Attended : 10

| S.No  | REG.No.  | Name         | Q1           | Q2           | Q3           | Q4           | Q5  | Q6  | Q7  | Q8  | Q9  | Q10 | Q11/Q12 | Q13/Q14 | Q15/Q16 | Q17/Q18 | Q19/Q20 | Q21/Q22 | Test Score |
|---|----------|--------------|--------------|--------------|--------------|--------------|-----|-----|-----|-----|-----|-----|---------|---------|---------|---------|---------|---------|------------|
|   |          |              | 2            | 2            | 2            | 2            | 2   | 2   | 2   | 2   | 2   | 2   | 2       | 2       | 14      | 14      | 14      | 14      |            |
| Expected Marks to Attainment                        |          |              | 1.0          | 1.0          | 1.0          | 1.0          | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 7.0     | 7.0     | 7.0     | 7.0     | 7.0     | 5.0     |            |
| 1   | 16106001 | AARTHI GR    | 2            | 2            |              | 2            |     |     |     |     |     |     | 13      | 12      | 13      | 13      |         | 2       | 59         |
| 2   | 16106002 | ABHINANDH M  | 2            | 2            | 1            | 1            | 1   | 1   | 2   | 2   |     | 2   | 13      | 13      | 13      | 13      | 8       | 6       | 80         |
| 3   | 16106003 | ABHIVARNA C  | 2            | 2            |              | 2            | 1   | 1   |     | 1   |     | 1   | 13      | 12      | 7       | 13      | 2       |         | 57         |
| 4   | 16106004 | ABISHA.B     | 2            | 2            |              | 2            | 1   |     | 2   | 0   |     | 1   | 14      | 13      | 13      | 13      | 14      | 10      | 87         |
| 5   | 16106005 | ADITHYA      | 2            | 2            |              | 2            | 0   | 2   | 2   | 0   | 0   |     |         |         |         |         | 4       |         | 14         |
| 6   | 16106006 | AKHAASH A    | 0            | 1            |              | 0            |     |     |     |     |     |     |         |         |         |         |         |         | 1          |
| 7   | 16106007 | AMISHA VERMA | 2            | 2            |              | 2            | 2   | 2   | 2   | 2   |     |     | 14      | 13      | 13      | 13      | 7       | 7       | 81         |
| 8   | 16106009 | ARAVINDRAJ G | 0            |              |              | 1            |     | 1   |     | 2   |     |     | 13      | 13      | 7       | 13      | 13      | 9       | 72         |
| 9   | 16106011 | ARUN I       | 0            | 2            | 1            | 2            | 1   | 2   | 2   | 2   | 0   | 1   | 14      | 13      | 14      | 12      | 9       | 9       | 84         |
| 10  | 16106803 | MAHENDRAN.P  | 0            | 0            |              | 0            | 0   |     | 0   | 0   |     | 0   | 2       | 0       | 1       |         |         | 0       | 3          |
| Each Question Expected Level of Attainment - ( 50%) |          |              | 6            | 8            | 2            | 8            | 5   | 6   | 5   | 5   | 0   | 4   | 7       | 7       | 7       | 7       | 5       | 5       |            |
| No of students scores upto expected level           |          |              | 60           | 80           | 20           | 80           | 50  | 60  | 50  | 50  | 0   | 40  | 70      | 70      | 70      | 70      | 50      | 50      |            |
| Mapping with CO                                     |          |              | CO1          | CO1          | CO1          | CO1          | CO2 | CO2 | CO3 | CO3 | CO4 | CO4 | CO1     | CO2     | CO3     | CO3     | CO4     | CO4     |            |
| ATTAINMENT LEVEL OF ALL CO                          |          |              | CO1          | CO2          | CO3          | CO4          |     |     |     |     |     |     |         |         |         |         |         |         |            |
|   |          |              | <b>62.00</b> | <b>60.00</b> | <b>60.00</b> | <b>35.00</b> |     |     |     |     |     |     |         |         |         |         |         |         |            |

|                            |                                  |                             |                     |
|----------------------------|----------------------------------|-----------------------------|---------------------|
| No of Student Passed = : 7 | No of Student (Single Digit) = 2 | Pass Percentage ( % ) 70.00 | Total Strength : 10 |
| No of Student Failed = : 3 | No of Student (Zero) = 0         |                             | Total Attended : 10 |

Faculty Signature  
[ J.RAMYA ]

HOD  
[ Dr.P.Rajeswari ]

DEAN-ACADEMICS  
[Dr. MAGUESWARAN P N]



## HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY

Valley Campus, Pollachi Highway, Coimbatore - 641032

### DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

#### END SEMESTER EXAM

Each Question Expected Level of Attainment - 50%

COURSE NAME & CODE : 16EC6203 / DIGITAL IMAGE PROCESSING

Batch : 2016-2020

SECTION : A

Total Strength : 10

Name of the Faculty : J.RAMYA

Total Attended : 9

| S.No  | REG.No.  | Name         | GRADE                        | MARK  |
|---|----------|--------------|------------------------------|-------|
|   |          |              |                              | 100   |
|   |          |              | Expected Marks to Attainment | 50.00 |
| 1   | 16106001 | AARTHI GR    | RA                           | -     |
| 2   | 16106002 | ABHINANDH M  | A                            | 79    |
| 3   | 16106003 | ABHIVARNA C  | B                            | 59    |
| 4   | 16106004 | ABISHA.B     | B+                           | 69    |
| 5   | 16106005 | ADITHYA      | B+                           | 69    |
| 6   | 16106006 | AKHAASH A    | AB                           | -     |
| 7   | 16106007 | AMISHA VERMA | B+                           | 69    |
| 8   | 16106009 | ARAVINDRAJ G | B                            | 59    |
| 9   | 16106011 | ARUN I       | B+                           | 69    |
| 10  | 16106803 | MAHENDRAN.P  | RA                           | -     |
| Each Question Expected Level of Attainment - ( 50%) |          |              |                              | 7     |
| No of students scores upto expected level           |          |              |                              | 77.78 |

Faculty Signature  
[ J.RAMYA ]

HOD  
[ Dr.P.Rajeswari ]

DEAN-ACADEMICS  
[Dr. MAGUDESWARAN P N]



## HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY

Valley Campus, Pollachi Highway, Coimbatore - 641032

### DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

#### ATTENDANCE AND ASSIGNMENT MARKS

Each Question Expected Level of Attainment - 50%

COURSE NAME & CODE : 16EC6203 / DIGITAL IMAGE PROCESSING

SECTION : A

Name of the Faculty : J.RAMYA

Batch : 2016-2020

Total Strength : 10

| S.No   | REG.No.  | Name         | ASSIGNMENT                   |            |            |                         |           | ATTENDANCE PERCENTAGE % | ATTENDANCE MARKS |             |
|--|----------|--------------|------------------------------|------------|------------|-------------------------|-----------|-------------------------|------------------|-------------|
|  |          |              | I                            | II         | III        | TOTAL                   | WEIGHTAGE |                         |                  |             |
|  |          |              | Expected Marks to Attainment | 2.5        | 2.5        | 2.5                     | 7.5       |                         |                  | 7.5         |
|  |          |              |                              |            |            | ASSIGNMENT PERCENTAGE % |           | 5                       |                  |             |
|  |          |              |                              |            |            |                         |           | 2.50                    |                  |             |
| 1  | 16106001 | AARTHI GR    | 5                            | 5          | 5          | 15                      | 5         | 100                     | 87.72            | 4           |
| 2  | 16106002 | ABHINANDH M  | 5                            | 4          | 4          | 13                      | 4.33      | 86.6                    | 91.23            | 5           |
| 3  | 16106003 | ABHIVARNA C  | 5                            | 3          | 3          | 11                      | 3.67      | 73.4                    | 68.42            | 0           |
| 4  | 16106004 | ABISHA.B     | 5                            | 4          | 5          | 14                      | 4.67      | 93.4                    | 96.49            | 5           |
| 5  | 16106005 | ADITHYA      | 5                            | 4          | 5          | 14                      | 4.67      | 93.4                    | 89.47            | 4           |
| 6  | 16106006 | AKHAASH A    | 2                            | 3          | 4          | 9                       | 3         | 60                      | 61.4             | 0           |
| 7  | 16106007 | AMISHA VERMA | 5                            | 5          | 5          | 15                      | 5         | 100                     | 85.96            | 4           |
| 8  | 16106009 | ARAVINDRAJ G | 5                            | 3          | 4          | 12                      | 4         | 80                      | 73.68            | 0           |
| 9  | 16106011 | ARUN I       | 5                            | 4          | 5          | 14                      | 4.67      | 93.4                    | 87.72            | 4           |
| 10   | 16106803 | MAHENDRAN.P  | 2                            | 3          | 3          | 8                       | 2.67      | 53.4                    | 71.93            | 0           |
| <b>OVER ALL ASSIGNMENT AND ATTENDANCE</b>        |          |              | 8.00                         | 10.00      | 10.00      | <b>#WERT!</b>           |           | <b>83.36</b>            | <b>81</b>        | <b>2.60</b> |
| <b>No of students scores upto expected level</b> |          |              | 80.00                        | 100.00     | 100.00     |                         |           |                         |                  |             |
| <b>Mapping with CO</b>                           |          |              | CO1<br>CO2                   | CO2<br>CO3 | CO4<br>CO5 |                         |           |                         |                  |             |

OVERALL ATT % & ASSING % CALCULATION SHOULD BE DONE DEPENDING ON CLASS STRENGTH  
ATTENDANCE % SHOULD BE TAKEN FROM ECAMPUS AND DISTRIBUTE THE MARKS ACCORDING TO THE SPLIT UP'S

Faculty Signature  
[ J.RAMYA ]

HOD  
[ Dr.P.Rajeswari ]

DEAN-ACADEMICS  
[Dr. MAGUDESWARAN P N]



## HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY

Valley Campus, Pollachi Highway, Coimbatore - 641032

### DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

#### CO AND PO MAPPING

COURSE NAME & CODE : 16EC6203 / DIGITAL IMAGE PROCESSING

Batch : 2016-2020

Name of the Faculty : J.RAMYA

SECTION : A

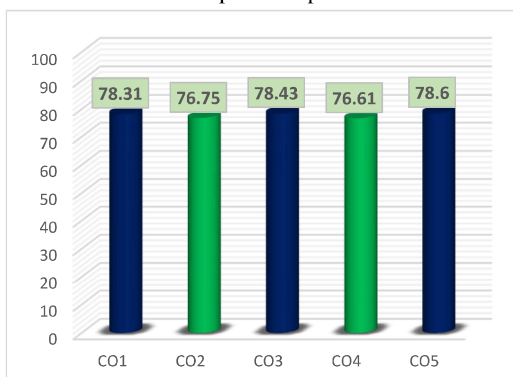
#### CO Attainment

| CO's | INT I | INT II | MID SEM | INT III | ASSIGN | INT (100%) | INT (25%) | END SEM (100%) | END SEM (75%) | DA (100%) | DA (80%) | IDA (20%) | Attainment (100%) | AL |
|------|-------|--------|---------|---------|--------|------------|-----------|----------------|---------------|-----------|----------|-----------|-------------------|----|
| CO1  | 51.7  |        | 62.0    |         | 80.0   | 64.6       | 16.1      | 77.8           | 58.3          | 74.5      | 59.6     | 18.7      | 78.3              | 2  |
| CO2  | 36.7  | 72.2   | 60.0    |         | 90.0   | 64.7       | 16.2      | 77.8           | 58.3          | 74.5      | 59.6     | 17.1      | 76.8              | 2  |
| CO3  |       | 33.3   | 60.0    |         | 100.0  | 64.4       | 16.1      | 77.8           | 58.3          | 74.5      | 59.6     | 18.9      | 78.4              | 2  |
| CO4  |       |        | 35.0    | 35.0    | 100.0  | 56.7       | 14.2      | 77.8           | 58.3          | 72.5      | 58.0     | 18.6      | 76.6              | 2  |
| CO5  |       |        |         | 38.0    | 100.0  | 69.0       | 17.3      | 77.8           | 58.3          | 75.6      | 60.5     | 18.1      | 78.6              | 2  |

#### CO-PO Mapping

| CO's | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1  | 3   | -   | 2   | 1   | 2   | 2   | -   | -   | 2   | -    | -    | 2    | 3    | 2    |
| CO2  | 3   | 3   | 3   | 3   | 2   | 3   | -   | -   | 2   | -    | -    | 2    | 3    | 2    |
| CO3  | 3   | 2   | 3   | 3   | 2   | 2   | -   | -   | 2   | -    | -    | 2    | 3    | 2    |
| CO4  | 3   | 3   | 2   | 2   | 2   | 2   | -   | -   | 2   | -    | -    | 2    | 3    | 2    |
| CO5  | 3   | 2   | 2   | 2   | 2   | 3   | -   | -   | 2   | -    | -    | 2    | 2    | 2    |

#### Graphical Representation - CO Attainment



| Scale       |                  |
|-------------|------------------|
| Weightage   | Attainment Level |
| >= 80 %     | 3                |
| >=70 & < 80 | 2                |
| >=60 & < 70 | 1                |

#### PO Attainment

| CO's | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1  | 2   | -   | 1.3 | 0.7 | 1.3 | 1.3 | -   | -   | 1.3 | -    | -    | 1.3  | 2    | 1.3  |
| CO2  | 2   | 2   | 2   | 2   | 1.3 | 2   | -   | -   | 1.3 | -    | -    | 1.3  | 2    | 1.3  |
| CO3  | 2   | 1.3 | 2   | 2   | 1.3 | 1.3 | -   | -   | 1.3 | -    | -    | 1.3  | 2    | 1.3  |
| CO4  | 2   | 2   | 1.3 | 1.3 | 1.3 | 1.3 | -   | -   | 1.3 | -    | -    | 1.3  | 2    | 1.3  |
| CO5  | 2   | 1.3 | 1.3 | 1.3 | 1.3 | 2   | -   | -   | 1.3 | -    | -    | 1.3  | 1.3  | 1.3  |
|      | 2   | 1.7 | 1.6 | 1.5 | 1.3 | 1.6 | -   | -   | 1.3 | -    | -    | 1.3  | 1.9  | 1.3  |

\*DA - Direct Assessment

\*AL - Attainment Level

\*IDA - Indirect Assessment

Faculty Signature  
[ J.RAMYA ]

HOD  
[ Dr.P.Rajeswari ]



## HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY

Valley Campus, Pollachi Highway, Coimbatore - 641032

### DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

#### Consolidated Internal Marks

COURSE NAME & CODE : 16EC6203 / DIGITAL IMAGE PROCESSING

Batch : 2016-2020

SECTION : A

Total Strength : 10

Name of the Faculty : J.RAMYA

| S.No | REG.No.  | Name         | INT 1<br>5 Marks | INT 2<br>5 Marks | INT 3<br>5 Marks | Internal<br>10 Marks | MID SEM<br>5 Marks | Attd<br>5 Marks | Assign<br>5 Marks | Total<br>25 Marks |
|------|----------|--------------|------------------|------------------|------------------|----------------------|--------------------|-----------------|-------------------|-------------------|
| 1    | 16106001 | AARTHI GR    | 1.9              | 2.5              | 0.9              | 4.4                  | 2.95               | 4               | 5                 | 16.35             |
| 2    | 16106002 | ABHINANDH M  | 3.6              | 2.8              | 1.7              | 6.4                  | 4                  | 4               | 5                 | 19.4              |
| 3    | 16106003 | ABHIVARNA C  | 1.8              | 2.5              | 0.5              | 4.3                  | 2.85               | 4               | 5                 | 16.15             |
| 4    | 16106004 | ABISHA.B     | 3.1              | 3.2              | 3.4              | 6.6                  | 4.35               | 4               | 5                 | 19.95             |
| 5    | 16106005 | ADITHYA      | 2.1              | 3.7              | 3                | 6.7                  | 0.7                | 4               | 5                 | 16.4              |
| 6    | 16106006 | AKHAASH A    | 0.2              | 0                | 0                | 0.2                  | 0.05               | 4               | 5                 | 9.25              |
| 7    | 16106007 | AMISHA VERMA | 3.5              | 3.5              | 3.5              | 7                    | 4.05               | 4               | 5                 | 20.05             |
| 8    | 16106009 | ARAVINDRAJ G | 2                | 2.8              | 0.3              | 4.8                  | 3.6                | 4               | 5                 | 17.4              |
| 9    | 16106011 | ARUN I       | 3.7              | 4.4              | 1.7              | 8.1                  | 4.2                | 4               | 5                 | 21.3              |
| 10   | 16106803 | MAHENDRAN.P  | 0.1              | 0                | 0.1              | 0.2                  | 0.15               | 4               | 5                 | 9.35              |

Faculty Signature  
[ J.RAMYA ]

HOD  
[ Dr.P.Rajeswari ]

DEAN-ACADEMICS  
[Dr. MAGUDESWARAN P N]

*ANNEXURE III*

ENTRY MAPPING OF COs and POs:

| CO/PO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO-1 | PSO-2 |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|-------|-------|
| CO1   | 1   | 3   | 1   | 1   | 1   | 1   | 1   | 1   | -   | -    | -    | -    | 1     | 1     |
| CO2   | 3   | 1   | 2   | 1   | -   | -   | -   | -   | -   | -    | -    | -    | 2     | 2     |
| CO3   | -   | 3   | 3   | 2   | -   | -   | -   | -   | 1   | -    | -    | -    | 3     | 3     |
| CO4   | -   | 1   | 1   | -   | -   | -   | -   | -   | -   | -    | -    | -    | 1     | 1     |
| CO5   | 2   | 2   | 2   | 2   | -   | -   | -   | -   | -   | -    | -    | 1    | 2     | 2     |
| AVG   | 2   | 2   | 1.8 | 1.5 | 1   | 1   | 1   | 1   | 1   | -    | -    | 1    | 1.8   | 1.8   |

| Indirect Survey |               |          |          |              |
|-----------------|---------------|----------|----------|--------------|
| CO              | Excellent (3) | Good (2) | Poor (1) | Percentage % |
| CO1             | 35            | 10       | 2        | 90           |
| CO2             | 37            | 8        | 2        | 91.33        |
| CO3             | 36            | 10       | 1        | 91.33        |
| CO4             | 45            | 2        | 0        | 98.67        |
| CO5             | 40            | 5        | 2        | 93.67        |

|  |   |
|--|---|
| COURSE NAME & CODE                           | 16EC5203-DATA COMMUNICATION AND NETWORKS                |
| SECTION                                      | A   |
| Name of the Faculty                          | T.NIVETHITHA  |
| Department                                   | DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING |
| Batch  | 2017 - 2018   |
| Each Question Expected Level of Attainment - | 50%   |
|  | No of students scores upto expected level               |
|  | % of scoring above the attainment level                 |

Faculty Signature  
[T.Nivethitha]

HOD  
[Dr.P.Rajeswari]

DEAN-ACADEMICS  
[Dr. MAGUDESWARAN P N]





## HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY

Valley Campus, Pollachi Highway, Coimbatore - 641032

### DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

#### I

Each Question Expected Level of Attainment - 50%

COURSE NAME & CODE : 16EC5203-DATA COMMUNICATION AND NETWORKS

Batch : 2017 - 2018

SECTION : A

Total Strength : 10

Name of the Faculty : T.NIVETHITHA

Total Attended : 10

| S.No  | REG.No.  | Name                           | Q1           | Q2                    | Q3           | Q4           | Q5           | Q 6                 | Q7/Q8        | Q9/Q10       | Q11/Q12      | Test Score |
|---|----------|--------------------------------|--------------|-----------------------|--------------|--------------|--------------|---------------------|--------------|--------------|--------------|------------|
|   |          |                                | 2            | 2                     | 2            | 2            | 2            | 2                   | 14           | 14           | 10           |            |
| Expected Marks to Attainment                        |          |                                | 1.0          | 1.0                   | 1.0          | 1.0          | 1.0          | 1.0                 | 7.0          | 7.0          | 5.0          |            |
| 1   | 16106041 | HEMA PREETHI D                 | 1            | 1                     | 0            | 0            | 2            |                     | 11           | 11           | 1            | 27         |
| 2   | 16106042 | INDHUJA A                      | 1            |                       |              |              |              |                     | 13           | 4            | 3            | 21         |
| 3   | 16106043 | JANANI A                       | 1            | 2                     | 2            | 1            | 2            | 2                   | 13           | 9            | 3            | 35         |
| 4   | 16106044 | JAYAKUMAR .S                   | 2            | 2                     | 1            | 1            | 2            |                     | 9            | 6            | 5            | 28         |
| 5   | 16106045 | JAYA PRAKASH L                 | 1            | 1                     | 1            | 1            | 0            | 2                   | 0            | 2            |              | 8          |
| 6   | 16106046 | JAYASHREE J                    | 2            | 2                     | 2            | 2            | 2            | 2                   | 13           | 9            | 4            | 38         |
| 7   | 16106047 | JAYSHREE.K                     | 2            | 2                     | 2            | 2            | 2            | 2                   | 11           | 10           | 3            | 36         |
| 8   | 16106048 | JEEVA P                        | 2            | 1                     | 0            | 0            |              |                     | 5            |              | 1            | 9          |
| 9   | 16106801 | ADITHVATHSHAN R                | 0            | 1                     | 1            | 1            | 0            | 2                   | 4            | 1            | 2            | 12         |
| 10  | 16106803 | MAHENDRAN.P                    | 0            | 0                     | 0            |              | 0            |                     |              | 2            |              | 2          |
| Each Question Expected Level of Attainment - ( 50%) |          |                                | <b>8</b>     | <b>8</b>              | <b>6</b>     | <b>6</b>     | <b>5</b>     | <b>5</b>            | <b>6</b>     | <b>4</b>     | <b>1</b>     |            |
| No of students scores upto expected level           |          |                                | <b>80.00</b> | <b>80.00</b>          | <b>60.00</b> | <b>60.00</b> | <b>50.00</b> | <b>50.00</b>        | <b>60.00</b> | <b>40.00</b> | <b>10.00</b> |            |
| Mapping with CO                                     |          |                                | CO2          | CO2                   | CO2          | CO2          | CO2          | CO1                 | CO1          | CO2          | CO1          |            |
| ATTAINMENT LEVEL OF ALL CO                          |          |                                | CO1          |                       | CO2          |              |              |                     |              |              |              |            |
|   |          |                                | <b>40.00</b> | <b>61.67</b>          |              |              |              |                     |              |              |              |            |
| No of Student Passed =                              | 5        | No of Student (Single Digit) = | 3            | Pass Percentage ( % ) |              | 50.00        |              | Total Strength : 10 |              |              |              |            |
| No of Student Failed =                              | 5        | No of Student (Zero) =         | 0            |                       |              |              |              | Total Attended : 10 |              |              |              |            |

Faculty Signature  
[T.Nivethitha]

HOD  
[Dr.P.Rajeswari]

DEAN-ACADEMICS  
[Dr. MAGUESWARAN P N]



## HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY

Valley Campus, Pollachi Highway, Coimbatore - 641032

### DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

#### II

**Each Question Expected Level of Attainment - 50%**

COURSE NAME & CODE : 16EC5203-DATA COMMUNICATION AND NETWORKS

Batch : 2017 - 2018

SECTION : A

Total Strength : 10

Name of the Faculty : T.NIVETHITHA

Total Attended : 10

| S.No  | REG.No.  | Name                           | Q1           | Q2                    | Q3           | Q4           | Q5           | Q6                  | Q7/Q8        | Q9/Q10       | Q11/Q12      | Test Score |
|---|----------|--------------------------------|--------------|-----------------------|--------------|--------------|--------------|---------------------|--------------|--------------|--------------|------------|
|   |          |                                | 2            | 2                     | 2            | 2            | 2            | 2                   | 2            | 14           | 14           |            |
| <b>Expected Marks to Attainment</b>                 |          |                                | 1.0          | 1.0                   | 1.0          | 1.0          | 1.0          | 1.0                 | 7.0          | 7.0          | 5.0          |            |
| 1   | 16106041 | HEMA PREETHI D                 | 2            | 1                     | 2            | 1            | 2            | 1                   | 8            | 10           | 2            | 29         |
| 2   | 16106042 | INDHUJA A                      |              |                       |              |              |              |                     | 11           | 12           | 2            | 25         |
| 3   | 16106043 | JANANI A                       | 2            | 2                     | 2            | 2            | 2            | 2                   | 12           | 13           | 7            | 44         |
| 4   | 16106044 | JAYAKUMAR .S                   | 2            | 1                     | 0            | 1            | 2            | 1                   | 10           | 10           | 3            | 30         |
| 5   | 16106045 | JAYA PRAKASH L                 | 2            | 1                     | 0            | 1            | 1            | 0                   | 3            |              | 3            | 11         |
| 6   | 16106046 | JAYASHREE J                    | 2            | 1                     | 2            | 2            | 2            | 2                   | 12           | 12           | 7            | 42         |
| 7   | 16106047 | JAYSHREE.K                     | 2            | 0.5                   | 2            | 2            | 2            | 1                   | 3.5          | 12           | 2            | 27         |
| 8   | 16106048 | JEEVA P                        |              |                       | 0            | 0            |              |                     | 2            |              | 0            | 2          |
| 9   | 16106801 | ADITHVATHSHAN R                |              |                       |              |              |              |                     |              |              |              | 0          |
| 10  | 16106803 | MAHENDRAN.P                    | 0            | 0                     | 0            | 0            | 0            | 0                   | 0            |              |              | 0          |
| Each Question Expected Level of Attainment - ( 50%) |          |                                | <b>6</b>     | <b>5</b>              | <b>4</b>     | <b>6</b>     | <b>6</b>     | <b>5</b>            | <b>5</b>     | <b>6</b>     | <b>2</b>     |            |
| No of students scores upto expected level           |          |                                | <b>60.00</b> | <b>50.00</b>          | <b>40.00</b> | <b>60.00</b> | <b>60.00</b> | <b>50.00</b>        | <b>50.00</b> | <b>60.00</b> | <b>20.00</b> |            |
| Mapping with CO                                     |          |                                | CO2          | CO2                   | CO2          | CO2          | CO2          | CO3                 | CO2          | CO2          | CO2          |            |
| ATTAINMENT LEVEL OF ALL CO                          |          |                                | CO2          |                       | CO3          |              |              |                     |              |              |              |            |
|   |          |                                | <b>50.00</b> |                       | <b>50.00</b> |              |              |                     |              |              |              |            |
| No of Student Passed =                              | 6        | No of Student (Single Digit) = | 3            | Pass Percentage ( % ) |              | 60.00        |              | Total Strength : 10 |              |              |              |            |
| No of Student Failed =                              | 4        | No of Student (Zero) =         | 2            |                       |              |              |              | Total Attended : 10 |              |              |              |            |

Faculty Signature  
[T.Nivethitha]

HOD  
[Dr.P.Rajeswari]

DEAN-ACADEMICS  
[Dr. MAGUDESWARAN P N]



## HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY

Valley Campus, Pollachi Highway, Coimbatore - 641032

### DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

#### III

Each Question Expected Level of Attainment - 50%

COURSE NAME & CODE : 16EC5203-DATA COMMUNICATION AND NETWORKS

Batch : 2017 - 2018

SECTION : A

Total Strength : 10

Name of the Faculty : T.NIVETHITHA

Total Attended : 10

| S.No  | REG.No.  | Name                           | Q1           | Q2                    | Q3           | Q4           | Q5           | Q 6                 | Q7/Q8        | Q9/Q10       | Q11/Q12      | Test Score |
|---|----------|--------------------------------|--------------|-----------------------|--------------|--------------|--------------|---------------------|--------------|--------------|--------------|------------|
|   |          |                                | 2            | 2                     | 2            | 2            | 2            | 2                   | 2            | 14           | 14           |            |
| <b>Expected Marks to Attainment</b>                 |          |                                | 1.0          | 1.0                   | 1.0          | 1.0          | 1.0          | 1.0                 | 7.0          | 7.0          | 5.0          |            |
| 1   | 16106041 | HEMA PREETHI D                 |              |                       |              |              |              |                     | 13           |              |              | 13         |
| 2   | 16106042 | INDHUJA A                      | 0            | 2                     | 0            |              |              |                     | 10           |              | 1            | 13         |
| 3   | 16106043 | JANANI A                       | 2            | 2                     | 2            | 2            | 2            | 2                   | 12           | 12           | 9            | 45         |
| 4   | 16106044 | JAYAKUMAR .S                   | 2            | 2                     | 2            | 2            | 2            | 2                   | 4            |              | 9            | 25         |
| 5   | 16106045 | JAYA PRAKASH L                 | 0            | 0                     | 0            | 0            | 0            | 1                   |              |              | 2            | 3          |
| 6   | 16106046 | JAYASHREE J                    |              |                       |              | 2            | 2            |                     |              | 13           | 10           | 27         |
| 7   | 16106047 | JAYSHREE.K                     | 2            | 2                     | 2            | 2            | 2            | 2                   | 12           | 13           | 7            | 44         |
| 8   | 16106048 | JEEVA P                        |              |                       |              |              |              |                     | 0            |              | 1            | 1          |
| 9   | 16106801 | ADITHVATHSHAN R                | 1            | 1                     | 1            | 1            | 1            | 1                   |              |              | 2            | 8          |
| 10  | 16106803 | MAHENDRAN.P                    | 0            | 0                     | 0            | 1            | 0            |                     |              |              | 2            | 3          |
| Each Question Expected Level of Attainment - ( 50%) |          |                                | <b>4</b>     | <b>5</b>              | <b>4</b>     | <b>6</b>     | <b>5</b>     | <b>5</b>            | <b>4</b>     | <b>3</b>     | <b>4</b>     |            |
| No of students scores upto expected level           |          |                                | <b>40.00</b> | <b>50.00</b>          | <b>40.00</b> | <b>60.00</b> | <b>50.00</b> | <b>50.00</b>        | <b>40.00</b> | <b>30.00</b> | <b>40.00</b> |            |
| Mapping with CO                                     |          |                                | <b>CO4</b>   | <b>CO4</b>            | <b>CO4</b>   | <b>CO5</b>   | <b>CO5</b>   | <b>CO5</b>          | <b>CO4</b>   | <b>CO5</b>   | <b>CO4</b>   |            |
| ATTAINMENT LEVEL OF ALL CO                          |          |                                | CO4          |                       | CO5          |              |              |                     |              |              |              |            |
|   |          |                                | <b>42.00</b> |                       | <b>47.50</b> |              |              |                     |              |              |              |            |
| No of Student Passed =                              | 4        | No of Student (Single Digit) = | 4            | Pass Percentage ( % ) |              | 40.00        |              | Total Strength : 10 |              |              |              |            |
| No of Student Failed =                              | 6        | No of Student (Zero) =         | 0            |                       |              |              |              | Total Attended : 10 |              |              |              |            |

Faculty Signature  
[T.Nivethitha]

HOD  
[Dr.P.Rajeswari]

DEAN-ACADEMICS  
[Dr. MAGUESWARAN P N]



**HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY**

Valley Campus, Pollachi Highway, Coimbatore - 641032

**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING**

**MID SEMESTER EXAM**

Each Question Expected Level of Attainment - 50%

COURSE NAME & CODE : 16EC5203-DATA COMMUNICATION AND NETWORKS

SECTION : A

Name of the Faculty : T.NIVETHITHA

Batch : 2017 - 2018

Total Strength : 10

Total Attended : 10

| S.No  | REG.No.  | Name                         | Q1                               | Q2    | Q3    | Q4                          | Q5    | Q6    | Q7    | Q8    | Q9    | Q10                 | Q11/Q12 | Q13/Q14 | Q15/Q16 | Q17/Q18 | Q19/Q20 | Q21/Q22 | Test Score |    |
|---|----------|------------------------------|----------------------------------|-------|-------|-----------------------------|-------|-------|-------|-------|-------|---------------------|---------|---------|---------|---------|---------|---------|------------|----|
|   |          |                              | 2                                | 2     | 2     | 2                           | 2     | 2     | 2     | 2     | 2     | 2                   | 2       | 2       | 14      | 14      | 14      | 14      |            | 14 |
|   |          | Expected Marks to Attainment | 1.0                              | 1.0   | 1.0   | 1.0                         | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0                 | 7.0     | 7.0     | 7.0     | 7.0     | 7.0     | 5.0     |            |    |
| 1   | 16106041 | HEMA PREETHI D               | 2                                | 2     | 1     | 0                           | 2     | 0     | 0     | 2     |       |                     | 1       | 12      | 10      | 11      | 11      | 12      |            | 66 |
| 2   | 16106042 | INDHUJA A                    |                                  |       |       |                             |       |       |       |       |       |                     | 10      | 11      |         | 12      |         |         |            | 33 |
| 3   | 16106043 | JANANI A                     | 2                                | 2     | 2     | 1                           | 2     | 2     | 2     | 2     | 2     | 2                   | 13      | 11      | 11      | 13      | 12      | 9       |            | 88 |
| 4   | 16106044 | JAYAKUMAR .S                 | 2                                | 2     | 2     | 2                           | 2     | 2     | 2     | 2     | 1     | 2                   | 13      | 13      | 11      | 11      | 10      | 4       |            | 81 |
| 5   | 16106045 | JAYA PRAKASH L               | 0                                | 1     | 1     | 1                           | 1     | 1     | 0     | 1     | 1     | 1                   | 2       | 2       | 0       |         |         |         |            | 12 |
| 6   | 16106046 | JAYASHREE J                  | 2                                | 2     | 2     | 2                           | 2     | 2     | 2     | 2     | 2     | 2                   | 13      | 11      | 12      | 13      | 11      | 4       |            | 84 |
| 7   | 16106047 | JAYSHREE.K                   | 2                                | 2     | 2     | 2                           | 2     | 2     | 2     | 2     | 2     | 2                   | 14      | 13      | 13      | 12      | 12      | 6       |            | 90 |
| 8   | 16106048 | JEEVA P                      | 1                                |       | 1     |                             |       |       |       |       |       |                     | 0       | 0       | 0       |         |         |         |            | 2  |
| 9   | 16106801 | ADITHVATHSHAN R              | 1                                | 1     | 1     |                             |       |       | 1     |       |       | 1                   | 5       | 3       | 1       |         |         |         |            | 14 |
| 10  | 16106803 | MAHENDRAN.P                  |                                  | 1     |       |                             |       |       |       |       |       |                     | 3       | 1       |         |         |         |         |            | 5  |
| Each Question Expected Level of Attainment - ( 50%) |          |                              | 7                                | 8     | 8     | 5                           | 6     | 5     | 5     | 6     | 5     | 7                   | 6       | 6       | 5       | 6       | 5       | 2       |            |    |
| No of students scores upto expected level           |          |                              | 70.00                            | 80.00 | 80.00 | 50.00                       | 60.00 | 50.00 | 50.00 | 60.00 | 50.00 | 70.00               | 60.00   | 60.00   | 50.00   | 60.00   | 50.00   | 20.00   |            |    |
| Mapping with CO                                     |          |                              | CO4                              | CO5   | CO3   | CO2                         | CO2   | CO1   | CO1   | CO1   | CO1   | CO1                 | CO2     | CO2     | CO2     | CO1     | CO1     | CO1     |            |    |
| ATTAINMENT LEVEL OF ALL CO                          |          |                              | CO1                              | CO2   | CO3   | CO4                         |       |       |       |       |       |                     |         |         |         |         |         |         |            |    |
|   |          |                              | 51.25                            | 56.00 | 80.00 | 70.00                       |       |       |       |       |       |                     |         |         |         |         |         |         |            |    |
| No of Student Passed = : 5                          |          |                              | No of Student (Single Digit) = 2 |       |       | Pass Percentage ( % ) 50.00 |       |       |       |       |       | Total Strength : 10 |         |         |         |         |         |         |            |    |
| No of Student Failed = : 5                          |          |                              | No of Student (Zero) = 0         |       |       |                             |       |       |       |       |       | Total Attended : 10 |         |         |         |         |         |         |            |    |

Faculty Signature  
[T.Nivethitha]

HOD  
[Dr.P.Rajeswari]

DEAN-ACADEMICS  
[Dr. MAGUDESWARAN P N]



## HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY

Valley Campus, Pollachi Highway, Coimbatore - 641032

### DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

#### ATTENDANCE AND ASSIGNMENT MARKS

Each Question Expected Level of Attainment - 50%

COURSE NAME & CODE : 16EC5203-DATA COMMUNICATION AND NETWORKS

Batch : 2017 - 2018

SECTION : A

Total Strength : 10

Name of the Faculty : T.NIVETHITHA

| S.No                                      | REG.No.  | Name                         | ASSIGNMENT |            |            |               |           | ATTENDANCE PERCENTAGE | ATTENDANCE PERCENTAGE | ATTENDANCE MARKS |
|---|----------|------------------------------|------------|------------|------------|---------------|-----------|-----------------------|-----------------------|------------------|
|   |          |                              | I          | II         | III        | TOTAL         | WEIGHTAGE |                       |                       |                  |
|   |          |                              |            |            |            |               | 7.5       |                       |                       |                  |
|   |          | Expected Marks to Attainment | 2.5        | 2.5        | 2.5        | 7.5           | 3.75      |                       |                       | 5                |
| 1   | 16106041 | HEMA PREETHI D               | 5          | 5          | 5          | 15            | 5         | 100                   | 86                    | 4                |
| 2   | 16106042 | INDHUJA A                    | 5          | 5          | 5          | 15            | 5         | 100                   | 85                    | 3                |
| 3   | 16106043 | JANANI A                     | 5          | 5          | 5          | 15            | 5         | 100                   | 84                    | 3                |
| 4   | 16106044 | JAYAKUMAR .S                 | 5          | 5          | 5          | 15            | 5         | 100                   | 81                    | 3                |
| 5   | 16106045 | JAYA PRAKASH L               | 5          | 5          | 5          | 15            | 5         | 100                   | 80                    | 2                |
| 6   | 16106046 | JAYASHREE J                  | 5          | 5          | 5          | 15            | 5         | 100                   | 100                   | 5                |
| 7   | 16106047 | JAYSHREE.K                   | 5          | 5          | 5          | 15            | 5         | 100                   | 91                    | 5                |
| 8   | 16106048 | JEEVA P                      | 5          | 5          | 5          | 15            | 5         | 100                   | 90                    | 4                |
| 9   | 16106801 | ADITHVATHSHAN R              | 5          | 5          | 5          | 15            | 5         | 100                   | 89                    | 4                |
| 10  | 16106803 | MAHENDRAN.P                  | 5          | 5          | 5          | 15            | 5         | 100                   | 60                    | 0                |
| <b>OVER ALL ASSIGNMENT AND ATTENDANCE</b> |          |                              | 10.00      | 10.00      | 10.00      | <b>#WERT!</b> |           | <b>100.00</b>         | <b>85</b>             | <b>3.30</b>      |
| No of students scores upto expected level |          |                              | 100.00     | 100.00     | 100.00     |               |           |                       |                       |                  |
| Mapping with CO                           |          |                              | CO1<br>CO2 | CO2<br>CO3 | CO4<br>CO5 |               |           |                       |                       |                  |

OVERALL ATT % & ASSING % CALCULATION SHOULD BE DONE DEPENDING ON CLASS STRENGTH  
ATTENDANCE % SHOULD BE TAKEN FROM ECAMPUS AND DISTRIBUTE THE MARKS ACCORDING TO THE SPLIT UP'S

Faculty Signature  
[T.Nivethitha]

HOD  
[Dr.P.Rajeswari]

DEAN-ACADEMICS  
[Dr. MAGUDESWARAN P N]



## HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY

Valley Campus, Pollachi Highway, Coimbatore - 641032

### DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

#### CO AND PO MAPPING

COURSE NAME & CODE : 16EC5203-DATA COMMUNICATION AND NETWORKS

Batch : 2017 - 2018

Name of the Faculty : T.NIVETHITHA

SECTION : A

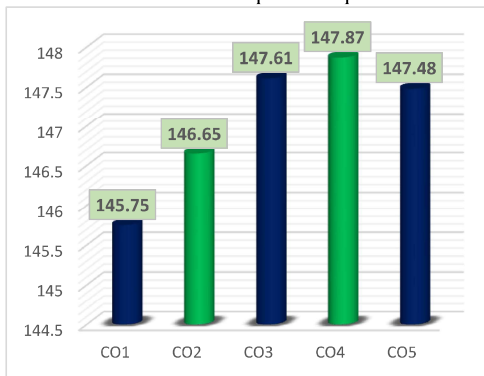
#### CO Attainment

| CO's | LAB EXP % | LAB Model | INT I | INT II | MID SEM | INT III | ASSIGNMENT | INT (100%) | INT (50%) | END SEM | END SEM (50%) | DA (100%) | DA (80%) | IDA (20%) | Attainment (100%) | AL |
|------|-----------|-----------|-------|--------|---------|---------|------------|------------|-----------|---------|---------------|-----------|----------|-----------|-------------------|----|
| CO1  | 730.00    | 100.00    | 40.0  |        | 51.3    |         | 100.0      | 239.4      | 119.69    | 80.0    | 40            | 159.7     | 127.8    | 18.0      | 145.8             | 3  |
| CO2  | 730.00    | 100.00    | 61.7  | 50.0   | 56.0    |         | 100.0      | 241.0      | 120.48    | 80.0    | 40            | 160.5     | 128.4    | 18.3      | 146.7             | 3  |
| CO3  | 720.00    | 100.00    |       | 50.0   | 80.0    |         | 100.0      | 243.3      | 121.67    | 80.0    | 40            | 161.7     | 129.3    | 18.3      | 147.6             | 3  |
| CO4  | 720.00    | 100.00    |       |        | 70.0    | 42.0    | 100.0      | 240.3      | 120.17    | 80.0    | 40            | 160.2     | 128.1    | 19.7      | 147.9             | 3  |
| CO5  | 720.00    | 100.00    |       |        |         | 47.5    | 100.0      | 241.9      | 120.94    | 80.0    | 40            | 160.9     | 128.8    | 18.7      | 147.5             | 3  |

#### CO-PO Mapping

| CO's | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1  | 1   | 3   | 1   | 1   | 1   | 1   | 1   | 1   | -   | -    | -    | -    | 1    | 1    |
| CO2  | 3   | 1   | 2   | 1   | -   | -   | -   | -   | -   | -    | -    | -    | 2    | 2    |
| CO3  | -   | 3   | 3   | 2   | -   | -   | -   | -   | 1   | -    | -    | -    | 3    | 3    |
| CO4  | -   | 1   | 1   | -   | -   | -   | -   | -   | -   | -    | -    | -    | 1    | 1    |
| CO5  | 2   | 2   | 2   | 2   | -   | -   | -   | -   | -   | -    | -    | 1    | 2    | 2    |

#### Graphical Representation - CO Attainment



Faculty Signature  
[T.Nivethitha]

| Scale       |                  |
|-------------|------------------|
| Weightage   | Attainment Level |
| >= 80 %     | 3                |
| >=70 & < 80 | 2                |
| >=60 & < 70 | 1                |

#### PO Attainment

| CO's | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1  | 1   | 3   | 1   | 1   | 1   | 1   | 1   | 1   | -   | -    | -    | -    | 1    | 1    |
| CO2  | 3   | 1   | 2   | 1   | -   | -   | -   | -   | -   | -    | -    | -    | 2    | 2    |
| CO3  | -   | 3   | 3   | 2   | -   | -   | -   | -   | 1   | -    | -    | -    | 3    | 3    |
| CO4  | -   | 1   | 1   | -   | -   | -   | -   | -   | -   | -    | -    | -    | 1    | 1    |
| CO5  | 2   | 2   | 2   | 2   | -   | -   | -   | -   | -   | -    | -    | 1    | 2    | 2    |
|      | 2   | 2   | 2   | 2   | 1   | 1   | 1   | 1   | 1   | -    | -    | 1    | 1.8  | 2    |

\*DA - Direct Assessment      \*AL - Attainment Level

\*IDA - Indirect Assessment

HOD  
[Dr.P.Rajeswari]



## HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY

Valley Campus, Pollachi Highway, Coimbatore - 641032

### DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

#### COURSE OUTCOME 1

COURSE NAME & CODE : 16EC5203-DATA COMMUNICATION AND NETWORKS

SECTION : A

Batch : 2017 - 2018

Name of the Faculty : T.NIVETHITHA

Total Strength : 10

| S.No                                 | Univ Reg No | Name            | Ex 1    |         |         |         |         | TOTAL   |         |         |         |         | Percentage | Score on Grade | Target $\geq$ 50 % |
|--------------------------------------|-------------|-----------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------------|----------------|--------------------|
|                                      |             |                 | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 |            |                |                    |
| 1                                    | 16106041    | HEMA PREETHI D  | 25      |         |         | 15      | 10      | 25      |         |         | 15      | 10      | 50         | 0              | Y                  |
| 2                                    | 16106042    | INDHUJA A       | 25      |         |         | 15      | 10      | 25      |         |         | 15      | 10      | 50         | 0              | Y                  |
| 3                                    | 16106043    | JANANI A        | 25      |         |         | 15      | 10      | 25      |         |         | 15      | 10      | 50         | 0              | Y                  |
| 4                                    | 16106044    | JAYAKUMAR .S    | 25      |         |         | 15      | 10      | 25      |         |         | 15      | 10      | 50         | 0              | Y                  |
| 5                                    | 16106045    | JAYA PRAKASH L  | 25      |         |         | 15      | 10      | 25      |         |         | 15      | 10      | 50         | 0              | Y                  |
| 6                                    | 16106046    | JAYASHREE J     | 25      |         |         | 15      | 10      | 25      |         |         | 15      | 10      | 50         | 0              | Y                  |
| 7                                    | 16106047    | JAYSHREE.K      | 25      |         |         | 15      | 10      | 25      |         |         | 15      | 10      | 50         | 0              | Y                  |
| 8                                    | 16106048    | JEEVA P         | 25      |         |         | 15      | 10      | 25      |         |         | 15      | 10      | 50         | 0              | Y                  |
| 9                                    | 16106801    | ADITHVATHSHAN R | 25      |         |         | 15      | 10      | 25      |         |         | 15      | 10      | 50         | 0              | Y                  |
| 10                                   | 16106803    | MAHENDRAN.P     | 25      |         |         | 15      | 10      | 25      |         |         | 15      | 10      | 50         | 0              | Y                  |
| Total Number of students             |             |                 |         |         |         |         |         |         |         |         |         | 10      |            |                |                    |
| Number of students Attained          |             |                 |         |         |         |         |         |         |         |         |         | 73      |            |                |                    |
| Percentage of Attainment             |             |                 |         |         |         |         |         |         |         |         |         | 730     |            |                |                    |
| Attainment Level of Course Outcome 1 |             |                 |         |         |         |         |         |         |         |         |         | 3       |            |                |                    |

Faculty Signature  
[T.Nivethitha]

HOD  
[Dr.P.Rajeswari]



## HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY

Valley Campus, Pollachi Highway, Coimbatore - 641032

### DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

#### COURSE OUTCOME 2

COURSE NAME & CODE : 16EC5203-DATA COMMUNICATION AND NETWORKS

SECTION : A

Batch : 2017 - 2018

Name of the Faculty : T.NIVETHITHA

Total Strength : 10

| S.No                                 | Univ Reg No | Name            | Ex 1    |         |         |         |         | Average |         |         |         |         | Percentage | Score on Grade | Target $\geq$ : 50 % |
|--------------------------------------|-------------|-----------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------------|----------------|----------------------|
|                                      |             |                 | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 |            |                |                      |
| 1                                    | 16106041    | HEMA PREETHI D  | 25      |         | 15      | 10      | 25      |         |         | 15      | 10      | 50      | 0          | Y              |                      |
| 2                                    | 16106042    | INDHUJA A       | 25      |         | 15      | 10      | 25      |         |         | 15      | 10      | 50      | 0          | Y              |                      |
| 3                                    | 16106043    | JANANI A        | 25      |         | 15      | 10      | 25      |         |         | 15      | 10      | 50      | 0          | Y              |                      |
| 4                                    | 16106044    | JAYAKUMAR .S    | 25      |         | 15      | 10      | 25      |         |         | 15      | 10      | 50      | 0          | Y              |                      |
| 5                                    | 16106045    | JAYA PRAKASH L  | 25      |         | 15      | 10      | 25      |         |         | 15      | 10      | 50      | 0          | Y              |                      |
| 6                                    | 16106046    | JAYASHREE J     | 25      |         | 15      | 10      | 25      |         |         | 15      | 10      | 50      | 0          | Y              |                      |
| 7                                    | 16106047    | JAYSHREE.K      | 25      |         | 15      | 10      | 25      |         |         | 15      | 10      | 50      | 0          | Y              |                      |
| 8                                    | 16106048    | JEEVA P         | 25      |         | 15      | 10      | 25      |         |         | 15      | 10      | 50      | 0          | Y              |                      |
| 9                                    | 16106801    | ADITHVATHSHAN R | 25      |         | 15      | 10      | 25      |         |         | 15      | 10      | 50      | 0          | Y              |                      |
| 10                                   | 16106803    | MAHENDRAN.P     | 25      |         | 15      | 10      | 25      |         |         | 15      | 10      | 50      | 0          | Y              |                      |
| Total Number of students             |             |                 |         |         |         |         |         |         |         |         |         | 10      |            |                |                      |
| Number of students Attained          |             |                 |         |         |         |         |         |         |         |         |         | 73      |            |                |                      |
| Percentage of Attainment             |             |                 |         |         |         |         |         |         |         |         |         | 730     |            |                |                      |
| Attainment Level of Course Outcome 2 |             |                 |         |         |         |         |         |         |         |         |         | 3       |            |                |                      |

Faculty Signature  
[T.Nivethitha]

HOD  
[Dr.P.Rajeswari]



**HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY**  
Valley Campus, Pollachi Highway, Coimbatore - 641032  
**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING**  
**COURSE OUTCOME 3**

COURSE NAME & CODE : 16EC5203-DATA COMMUNICATION AND NETWORKS

SECTION : A

Batch : 2017 - 2018

Name of the Faculty : T.NIVETHITHA

Total Strength : 10

| S.No                                 | Univ Reg No | Name            | Ex 1    |         |         |         |         | TOTAL   |         |         |         |         | Percentage | Score on Grade | Target $\geq$ : 50 % |
|--------------------------------------|-------------|-----------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------------|----------------|----------------------|
|                                      |             |                 | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 |            |                |                      |
| 1                                    | 16106041    | HEMA PREETHI D  | 25      |         | 15      | 10      | 25      |         |         | 15      | 10      | 50      | 0          | Y              |                      |
| 2                                    | 16106042    | INDHUJA A       | 25      |         | 15      | 10      | 25      |         |         | 15      | 10      | 50      | 0          | Y              |                      |
| 3                                    | 16106043    | JANANI A        | 25      |         | 15      | 10      | 25      |         |         | 15      | 10      | 50      | 0          | Y              |                      |
| 4                                    | 16106044    | JAYAKUMAR .S    | 25      |         | 15      | 10      | 25      |         |         | 15      | 10      | 50      | 0          | Y              |                      |
| 5                                    | 16106045    | JAYA PRAKASH L  | 25      |         | 15      | 10      | 25      |         |         | 15      | 10      | 50      | 0          | Y              |                      |
| 6                                    | 16106046    | JAYASHREE J     | 25      |         | 15      | 10      | 25      |         |         | 15      | 10      | 50      | 0          | Y              |                      |
| 7                                    | 16106047    | JAYSHREE.K      | 25      |         | 15      | 10      | 25      |         |         | 15      | 10      | 50      | 0          | Y              |                      |
| 8                                    | 16106048    | JEEVA P         | 25      |         | 15      | 10      | 25      |         |         | 15      | 10      | 50      | 0          | Y              |                      |
| 9                                    | 16106801    | ADITHVATHSHAN R | 25      |         | 15      | 10      | 25      |         |         | 15      | 10      | 50      | 0          | Y              |                      |
| 10                                   | 16106803    | MAHENDRAN.P     | 25      |         | 15      | 10      | 25      |         |         | 15      | 10      | 50      | 0          | Y              |                      |
| Total Number of students             |             |                 |         |         |         |         |         |         |         |         |         | 10      |            |                |                      |
| Number of students Attained          |             |                 |         |         |         |         |         |         |         |         |         | 72      |            |                |                      |
| Percentage of Attainment             |             |                 |         |         |         |         |         |         |         |         |         | 720     |            |                |                      |
| Attainment Level of Course Outcome 3 |             |                 |         |         |         |         |         |         |         |         |         | 3       |            |                |                      |

Faculty Signature  
[T.Nivethitha]

HOD  
[Dr.P.Rajeswari]



## HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY

Valley Campus, Pollachi Highway, Coimbatore - 641032

### DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

#### COURSE OUTCOME 4

COURSE NAME & CODE : 16EC5203-DATA COMMUNICATION AND NETWORKS

SECTION : A

Batch : 2017 - 2018

Name of the Faculty : T.NIVETHITHA

Total Strength : 10

| S.No                                 | Univ Reg No | Name            | Ex 1    |         |         |         |         | TOTAL   |         |         |         |         | Percentage | Score on Grade Scale | Target $\geq$ : 50 % |
|--------------------------------------|-------------|-----------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------------|----------------------|----------------------|
|                                      |             |                 | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 |            |                      |                      |
| 1                                    | 16106041    | HEMA PREETHI D  | 25      |         | 15      | 10      | 25      |         |         | 15      | 10      | 50      | 0          | Y                    |                      |
| 2                                    | 16106042    | INDHUJA A       | 25      |         | 15      | 10      | 25      |         |         | 15      | 10      | 50      | 0          | Y                    |                      |
| 3                                    | 16106043    | JANANI A        | 25      |         | 15      | 10      | 25      |         |         | 15      | 10      | 50      | 0          | Y                    |                      |
| 4                                    | 16106044    | JAYAKUMAR .S    | 25      |         | 15      | 10      | 25      |         |         | 15      | 10      | 50      | 0          | Y                    |                      |
| 5                                    | 16106045    | JAYA PRAKASH L  | 25      |         | 15      | 10      | 25      |         |         | 15      | 10      | 50      | 0          | Y                    |                      |
| 6                                    | 16106046    | JAYASHREE J     | 25      |         | 15      | 10      | 25      |         |         | 15      | 10      | 50      | 0          | Y                    |                      |
| 7                                    | 16106047    | JAYSHREE.K      | 25      |         | 15      | 10      | 25      |         |         | 15      | 10      | 50      | 0          | Y                    |                      |
| 8                                    | 16106048    | JEEVA P         | 25      |         | 15      | 10      | 25      |         |         | 15      | 10      | 50      | 0          | Y                    |                      |
| 9                                    | 16106801    | ADITHVATHSHAN R | 25      |         | 15      | 10      | 25      |         |         | 15      | 10      | 50      | 0          | Y                    |                      |
| 10                                   | 16106803    | MAHENDRAN.P     | 25      |         | 15      | 10      | 25      |         |         | 15      | 10      | 50      | 0          | Y                    |                      |
| Total Number of students             |             |                 |         |         |         |         |         |         |         |         |         | 10      |            |                      |                      |
| Number of students Attained          |             |                 |         |         |         |         |         |         |         |         |         | 72      |            |                      |                      |
| Percentage of Attainment             |             |                 |         |         |         |         |         |         |         |         |         | 720     |            |                      |                      |
| Attainment Level of Course Outcome 4 |             |                 |         |         |         |         |         |         |         |         |         | 3       |            |                      |                      |

Faculty Signature  
[T.Nivethitha]

HOD  
[Dr.P.Rajeswari]



## HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY

Valley Campus, Pollachi Highway, Coimbatore - 641032

### DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

#### COURSE OUTCOME 5

COURSE NAME & CODE : 16EC5203-DATA COMMUNICATION AND NETWORKS

SECTION : A

Batch : 2017 - 2018

Name of the Faculty : T.NIVETHITHA

Total Strength : 10

| S.No                                 | Univ Reg No | Name            | Ex 1    |         |         |         |         | Average |         |         |         |         | Percentage | Score on Grade | Target $\geq$ : 50 % |
|--------------------------------------|-------------|-----------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------------|----------------|----------------------|
|                                      |             |                 | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 |            |                |                      |
| 1                                    | 16106041    | HEMA PREETHI D  | 25      |         | 15      | 10      | 25      |         |         | 15      | 10      | 50      | 0          | Y              |                      |
| 2                                    | 16106042    | INDHUJA A       | 25      |         | 15      | 10      | 25      |         |         | 15      | 10      | 50      | 0          | Y              |                      |
| 3                                    | 16106043    | JANANI A        | 25      |         | 15      | 10      | 25      |         |         | 15      | 10      | 50      | 0          | Y              |                      |
| 4                                    | 16106044    | JAYAKUMAR .S    | 25      |         | 15      | 10      | 25      |         |         | 15      | 10      | 50      | 0          | Y              |                      |
| 5                                    | 16106045    | JAYA PRAKASH L  | 25      |         | 15      | 10      | 25      |         |         | 15      | 10      | 50      | 0          | Y              |                      |
| 6                                    | 16106046    | JAYASHREE J     | 25      |         | 15      | 10      | 25      |         |         | 15      | 10      | 50      | 0          | Y              |                      |
| 7                                    | 16106047    | JAYSHREE.K      | 25      |         | 15      | 10      | 25      |         |         | 15      | 10      | 50      | 0          | Y              |                      |
| 8                                    | 16106048    | JEEVA P         | 25      |         | 15      | 10      | 25      |         |         | 15      | 10      | 50      | 0          | Y              |                      |
| 9                                    | 16106801    | ADITHVATHSHAN R | 25      |         | 15      | 10      | 25      |         |         | 15      | 10      | 50      | 0          | Y              |                      |
| 10                                   | 16106803    | MAHENDRAN.P     | 25      |         | 15      | 10      | 25      |         |         | 15      | 10      | 50      | 0          | Y              |                      |
| Total Number of students             |             |                 |         |         |         |         |         |         |         |         |         | 10      |            |                |                      |
| Number of students Attained          |             |                 |         |         |         |         |         |         |         |         |         | 72      |            |                |                      |
| Percentage of Attainment             |             |                 |         |         |         |         |         |         |         |         |         | 720     |            |                |                      |
| Attainment Level of Course Outcome 5 |             |                 |         |         |         |         |         |         |         |         |         | 3       |            |                |                      |

Faculty Signature  
[T.Nivethitha]

HOD  
[Dr.P.Rajeswari]



## HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY

Valley Campus, Pollachi Highway, Coimbatore - 641032

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Model Marks

Each Question Expected Level of Attainment - : 50%

COURSE NAME & CODE : 16EC5203-DATA COMMUNICATION AND NETWORKS

SECTION : A

Batch : 2017 - 2018

Name of the Faculty : T.NIVETHITHA

Total Strength : 10

| S.No                        | Univ Reg No | Name            | GRADE | Target $\geq$ : 50 % |
|-----------------------------|-------------|-----------------|-------|----------------------|
| 1                           | 16106041    | HEMA PREETHI D  | 70    | Y                    |
| 2                           | 16106042    | INDHUJA A       | 96    | Y                    |
| 3                           | 16106043    | JANANI A        | 94    | Y                    |
| 4                           | 16106044    | JAYAKUMAR .S    | 88    | Y                    |
| 5                           | 16106045    | JAYA PRAKASH L  | 92    | Y                    |
| 6                           | 16106046    | JAYASHREE J     | 90    | Y                    |
| 7                           | 16106047    | JAYSHREE.K      | 66    | Y                    |
| 8                           | 16106048    | JEEVA P         | 98    | Y                    |
| 9                           | 16106801    | ADITHVATHSHAN R | 98    | Y                    |
| 10                          | 16106803    | MAHENDRAN.P     | 74    | Y                    |
| Total Number of students    |             |                 | 10    |                      |
| Number of students Attained |             |                 | 10    |                      |
| Percentage of Attainment    |             |                 | 100   |                      |
| University Attainment Level |             |                 | 3     |                      |

Faculty Signature  
[T.Nivethitha]

HOD  
[Dr.P.Rajeswari]



## HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY

Valley Campus, Pollachi Highway, Coimbatore - 641032

### DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

#### END SEMESTER EXAM

Each Question Expected Level of Attainment - 50%

COURSE NAME & CODE : 16EC5203-DATA COMMUNICATION AND NETWORKS

Batch : 2017 - 2018

SECTION : A

Total Strength : 10

Name of the Faculty : T.NIVETHITHA

Total Attended : 10

| S.No  | REG.No.  | Name            | GRADE | MARK  |
|---|----------|-----------------|-------|-------|
|   |          |                 |       | 100   |
| Expected Marks to Attainment                        |          |                 |       | 50.00 |
| 1   | 16106041 | HEMA PREETHI D  | B     | 59    |
| 2   | 16106042 | INDHUJA A       | RA    | -     |
| 3   | 16106043 | JANANI A        | B     | 59    |
| 4   | 16106044 | JAYAKUMAR .S    | B     | 59    |
| 5   | 16106045 | JAYA PRAKASH L  | B     | 59    |
| 6   | 16106046 | JAYASHREE J     | B+    | 69    |
| 7   | 16106047 | JAYSHREE.K      | B+    | 69    |
| 8   | 16106048 | JEEVA P         | B     | 59    |
| 9   | 16106801 | ADITHVATHSHAN R | B     | 59    |
| 10  | 16106803 | MAHENDRAN.P     | RA    | -     |
| Each Question Expected Level of Attainment - ( 50%) |          |                 |       | 8     |
| No of students scores upto expected level           |          |                 |       | 80.00 |

Faculty Signature  
[T.Nivethitha]

HOD  
[Dr.P.Rajeswari]

DEAN-ACADEMICS  
[Dr. MAGUDESWARAN P N]

*ANNEXURE IV*

| ENTRY MAPPING OF COs and POs: |     |     |     |      |     |     |     |     |     |      |      |      |       |       |
|-------------------------------|-----|-----|-----|------|-----|-----|-----|-----|-----|------|------|------|-------|-------|
| CO/PO                         | PO1 | PO2 | PO3 | PO4  | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO-1 | PSO-2 |
| CO1                           | 3   | 2   | 2   | 3    | 3   | 1   | 2   | 2   | 3   | 2    | 2    | 2    | 1     | 1     |
| CO2                           | 3   | 2   | 3   | 2    | -   | -   | -   | -   | -   | -    | -    | -    | 2     | 2     |
| CO3                           | -   | 3   | 3   | 2    | 2   | -   | 2   | 3   | 1   | -    | -    | -    | 3     | 3     |
| CO4                           | -   | 1   | 1   | -    | -   | -   | -   | -   | -   | -    | -    | -    | 1     | 1     |
| CO5                           | 3   | 3   | 2   | 2    | -   | -   | -   | -   | -   | -    | -    | 1    | 2     | 2     |
| AVG                           | 3   | 2.2 | 2.2 | 2.25 | 2.5 | 1   | 2   | 2.5 | 2   | 2    | 2    | 1.5  | 1.8   | 1.8   |

| Indirect Survey |           |      |      |           |              |      |
|-----------------|-----------|------|------|-----------|--------------|------|
| CO              | Excellent | Good | Poor | Efficient | Percentage % |      |
| 1               | CO1       | 37   | 10   | 0         | 2.79         | 93   |
| 2               | CO2       | 35   | 5    | 7         | 2.6          | 86.7 |
| 3               | CO3       | 40   | 5    | 2         | 2.81         | 93.7 |
| -               | CO4       | 37   | 10   | 0         | 2.79         | 93   |
|                 | CO5       | 35   | 19   | 2         | 2.59         | 86.3 |
|                 |           |      |      |           |              |      |

|                                |  |
|--------------------------------|--|
| COURSE NAME & CODE             | 16EC7001 EMBEDDED SYSTEM LABORATORY                      |
| SECTION                        | A  |
| Name of the Faculty            | R VANITHA  |
| Department                     | DEPARTMENT OF ELECTRONICS AND COMMUNICATIONS ENGINEERING |
| Batch                          | 2016 - 2020  |
| Expected Level of Attainment - | 60%  |
|                                | No of students scores upto expected level                |
|                                | % of scoring above the attainment level                  |

Faculty Signature

[R.Vanitha]

HOD

[Dr.P.Rajeswari]

DEAN

[Dr.P.N Magudeswaran]

PRINCIPAL

[Dr.K.Karunakaran]

|    | A | B    | C           | D                    | E               | F          |
|----|---|------|-------------|----------------------|-----------------|------------|
| 1  |   |      |             |                      |                 |            |
| 2  |   |      |             | Total Strength       | 47              | 47         |
| 3  |   |      |             | Total Attended       | 47              | 47         |
| 4  |   | S.No | Univ Reg No | Name                 | Model Exam(100) | UNIV GRADE |
| 5  |   | 1    | 16106001    | AARTHI GR            | 60              | A+         |
| 6  |   | 2    | 16106002    | ABHINANDH M          | 92              | O          |
| 7  |   | 3    | 16106003    | ABHIVARNA C          | 75              | O          |
| 8  |   | 4    | 16106004    | ABISHA.B             | 96              | O          |
| 9  |   | 5    | 16106005    | ADITHYA NATHAN.B     | 92              | O          |
| 10 |   | 6    | 16106006    | AKHAASH A            | 55              | A          |
| 11 |   | 7    | 16106007    | AMISHA VERMA         | 92              | O          |
| 12 |   | 8    | 16106009    | ARAVINDRAJ G         | 94              | O          |
| 13 |   | 9    | 16106011    | ARUN RAJESH KANNAN I | 85              | O          |
| 14 |   | 10   | 16106012    | ASWIN KRRISHNAN.S    | 80              | O          |
| 15 |   | 11   | 16106013    | AVINASH P            | 60              | A          |
| 16 |   | 12   | 16106014    | BALAMURUGAN.P        | 90              | O          |
| 17 |   | 13   | 16106015    | BASKAR R             | 72              | A+         |
| 18 |   | 14   | 16106016    | BAVITHRA MEENA .V    | 92              | O          |
| 19 |   | 15   | 16106017    | BENITA S             | 74              | A+         |
| 20 |   | 16   | 16106018    | CYNTHIA SOPHIE R     | 60              | A+         |
| 21 |   | 17   | 16106019    | DEEBIKA S            | 70              | A+         |
| 22 |   | 18   | 16106020    | DEVARAJ V            | 86              | O          |
| 23 |   | 19   | 16106021    | DHANALAKSHMI A       | 92              | O          |
| 24 |   | 20   | 16106022    | DHANYA VARSHINI V    | 95              | O          |
| 25 |   | 21   | 16106023    | DHIVAGAR V           | 60              | A+         |
| 26 |   | 22   | 16106024    | DHIYANESH R          | 74              | A+         |
| 27 |   | 23   | 16106025    | DINA CYNTHYA R       | 91              | O          |
| 28 |   | 24   | 16106026    | DINESH S V           | 52              | B+         |

|    | A | B  | C        | D                      | E  | F  |
|----|---|----|----------|------------------------|----|----|
| 29 |   | 25 | 16106027 | FARHANAH.M.S           | 92 | O  |
| 30 |   | 26 | 16106029 | GANESA MOORTHY         | 72 | A+ |
| 31 |   | 27 | 16106030 | GAYATHRI.S             | 94 | O  |
| 32 |   | 28 | 16106031 | GIRITHARAKARTHIKEYAN M | 82 | A+ |
| 33 |   | 29 | 16106032 | GOUDAM M               | 80 | A+ |
| 34 |   | 30 | 16106033 | GOWTHAM R              | 62 | O  |
| 35 |   | 31 | 16106034 | HAREESH KUMAR T S      | 82 | O  |
| 36 |   | 32 | 16106035 | HARI PRASAD P          | 70 | A  |
| 37 |   | 33 | 16106036 | HARIRAM P S            | 74 | O  |
| 38 |   | 34 | 16106037 | HARISH N               | 72 | A+ |
| 39 |   | 35 | 16106038 | HARISH V               | 62 | A+ |
| 40 |   | 36 | 16106039 | HARSHA V               | 80 | A  |
| 41 |   | 37 | 16106040 | HARSHINI M S           | 80 | O  |
| 42 |   | 38 | 16106041 | HEMA PREEETHI D        | 84 | O  |
| 43 |   | 39 | 16106042 | INDHUJA A              | 82 | A  |
| 44 |   | 41 | 16106043 | JANANI A               | 88 | O  |
| 45 |   | 41 | 16106044 | JAYAKUMAR .S           | 74 | O  |
| 46 |   | 42 | 16106045 | JAYA PRAKASH L         | 0  | B+ |
| 47 |   | 43 | 16106046 | JAYASHREE J            | 95 | O  |
| 48 |   | 44 | 16106047 | JAYSHREE.K             | 92 | O  |
| 49 |   | 45 | 16106048 | JEEVA P                | 65 | A  |
| 50 |   | 46 | 16106801 | ADITHVATHSHAN R        | 72 | A+ |
| 51 |   | 47 | 16106803 | MAHENDRAN.P            | 80 | B+ |



**HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY**  
 Valley Campus, Pollachi Highway, Coimbatore - 641032  
**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING**  
**COURSE OUTCOME 1**

COURSE NAME & CODE : 16EC7001 EMBEDDED SYSTEM LABORATORY

SECTION : A

Batch : 2016 - 2020

Name of the Faculty : R VANITHA

Total Strength : 47

| S.No | Univ Reg No | Name                 | Ex 1    |         |         |         |         | EX2     |         |         |         |         | Average |         |         |         |         | Percentage | Score on Grade Scale | Target $\geq$ : 60 % |
|------|-------------|----------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------------|----------------------|----------------------|
|      |             |                      | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 |            |                      |                      |
| 1    | 16106001    | AARTHI GR            | 20      | 20      | 20      | 16      |         | 22      | 22      | 22      | 16      |         | 21      | 21      | 21      | 16      |         | 79         | 2                    | Y                    |
| 2    | 16106002    | ABHINANDH M          | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 100        | 3                    | Y                    |
| 3    | 16106003    | ABHIVARNA C          | 25      | 25      | 25      | 21      |         | 21      | 21      | 23      | 23      |         | 23      | 23      | 24      | 22      |         | 92         | 3                    | Y                    |
| 4    | 16106004    | ABISHA.B             | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                    |
| 5    | 16106005    | ADITHYA NATHAN.B     | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 100        | 3                    | Y                    |
| 6    | 16106006    | AKHAASH A            | 20      | 15      | 15      | 0       |         | 22      | 16      | 15      | 0       |         | 21      | 16      | 15      |         |         | 51.5       | 0                    |                      |
| 7    | 16106007    | AMISHA VERMA         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                    |
| 8    | 16106009    | ARAVINDRAJ G         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                    |
| 9    | 16106011    | ARUN RAJESH KANNAN I | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                    |
| 10   | 16106012    | ASWIN KRRISHNAN.S    | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                    |
| 11   | 16106013    | AVINASH P            | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                    |
| 12   | 16106014    | BALAMURUGAN.P        | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                    |
| 13   | 16106015    | BASKAR R             | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                    |
| 14   | 16106016    | BAVITHRA MEENA .V    | 20      | 15      | 15      | 12      |         | 20      | 15      | 15      | 12      |         | 20      | 15      | 15      | 12      |         | 62         | 1                    | Y                    |
| 15   | 16106017    | BENITA S             | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                    |
| 16   | 16106018    | CYNTHIA SOPHIE R     | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                    |
| 17   | 16106019    | DEEBIKA S            | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 84         | 3                    | Y                    |
| 18   | 16106020    | DEVARAJ V            | 20      | 20      | 20      | 28      |         | 20      | 20      | 20      | 28      |         | 20      | 20      | 20      | 28      |         | 88         | 3                    | Y                    |
| 19   | 16106021    | DHANALAKSHMI A       | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                    |
| 20   | 16106022    | DHANYA VARSHINI V    | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 100        | 3                    | Y                    |
| 21   | 16106023    | DHIVAGAR V           | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 100        | 3                    | Y                    |
| 22   | 16106024    | DHIYANESH R          | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 84         | 3                    | Y                    |

| S.No                                 | Univ Reg No | Name                   | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 | Percentage | Score on Grade Scale | Target $\geq$ 60 % |
|--------------------------------------|-------------|------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------------|----------------------|--------------------|
| 23                                   | 16106025    | DINA CYNTHYA R         | 20      | 20      | 20      | 18      |         | 20      | 20      | 20      | 18      |         | 20      | 20      | 20      | 18      |         | 78         | 2                    | Y                  |
| 24                                   | 16106026    | DINESH S V             | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                  |
| 25                                   | 16106027    | FARHANAH.M.S           | 20      | 15      | 15      | 0       |         | 20      | 15      | 15      | 0       |         | 20      | 15      | 15      |         |         | 50         | 0                    |                    |
| 26                                   | 16106029    | GANESA MOORTHY         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                  |
| 27                                   | 16106030    | GAYATHRI .S            | 25      | 24      | 25      | 25      |         | 25      | 24      | 25      | 25      |         | 25      | 24      | 25      | 25      |         | 99         | 3                    | Y                  |
| 28                                   | 16106031    | GIRITHARAKARTHIKEYAN M | 25      | 25      | 25      | 21      |         | 20      | 23      | 25      | 21      |         | 23      | 24      | 25      | 21      |         | 92.5       | 3                    | Y                  |
| 29                                   | 16106032    | GOUDAM M               | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                  |
| 30                                   | 16106033    | GOWTHAM R              | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 84         | 3                    | Y                  |
| 31                                   | 16106034    | HAREESH KUMAR T S      | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 84         | 3                    | Y                  |
| 32                                   | 16106035    | HARI PRASAD P          | 20      | 20      | 20      | 14      |         | 20      | 20      | 20      | 14      |         | 20      | 20      | 20      | 14      |         | 74         | 2                    | Y                  |
| 33                                   | 16106036    | HARIRAM P S            | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                  |
| 34                                   | 16106037    | HARISH N               | 20      | 20      | 20      | 16      |         | 20      | 20      | 20      | 16      |         | 20      | 20      | 20      | 16      |         | 76         | 2                    | Y                  |
| 35                                   | 16106038    | HARISH V               | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 100        | 3                    | Y                  |
| 36                                   | 16106039    | HARSHA V               | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                  |
| 37                                   | 16106040    | HARSHINI M S           | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 84         | 3                    | Y                  |
| 38                                   | 16106041    | HEMA PREETHI D         | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 84         | 3                    | Y                  |
| 39                                   | 16106042    | INDHUJA A              | 20      | 20      | 20      | 28      |         | 20      | 20      | 20      | 28      |         | 20      | 20      | 20      | 28      |         | 88         | 3                    | Y                  |
| 41                                   | 16106043    | JANANI A               | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                  |
| 41                                   | 16106044    | JAYAKUMAR .S           | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 84         | 3                    | Y                  |
| 42                                   | 16106045    | JAYA PRAKASH L         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                  |
| 43                                   | 16106046    | JAYASHREE J            | 20      | 20      | 20      | 20      |         | 20      | 20      | 20      | 20      |         | 20      | 20      | 20      | 20      |         | 80         | 3                    | Y                  |
| 44                                   | 16106047    | JAYSHREE.K             | 20      | 20      | 20      | 16      |         | 20      | 20      | 20      | 16      |         | 20      | 20      | 20      | 16      |         | 76         | 2                    | Y                  |
| 45                                   | 16106048    | JEEVA P                | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 100        | 3                    | Y                  |
| 46                                   | 16106801    | ADITHVATHSHAN R        | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                  |
| 47                                   | 16106803    | MAHENDRAN.P            | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                  |
| Total Number of students             |             |                        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         | 47         |                      |                    |
| Number of students Attained          |             |                        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         | 47         |                      |                    |
| Percentage of Attainment             |             |                        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         | 100        |                      |                    |
| Attainment Level of Course Outcome 1 |             |                        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         | 3          |                      |                    |

| S.No | Univ Reg No | Name | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 | Percentage | Score on Grade Scale | Target $\geq$ : 60 % |
|------|-------------|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------------|----------------------|----------------------|
|------|-------------|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------------|----------------------|----------------------|

Faculty Signature  
[R.Vanitha ]

HOD  
[ Dr.P.Rajeswari]



**HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY**  
 Valley Campus, Pollachi Highway, Coimbatore - 641032  
**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING**  
**COURSE OUTCOME 2**

COURSE NAME & CODE : 16EC7001 EMBEDDED SYSTEM LABORATORY

SECTION : A

Batch : 2016 - 2020

Name of the Faculty : R VANITHA

Total Strength : 47

| S.No | Univ Reg No | Name                 | Ex 3    |         |         |         |         | EX 4    |         |         |         |         | Average |         |         |         |         | Percentage | Score on Grade Scale | Target ≥ : 60 % |
|------|-------------|----------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------------|----------------------|-----------------|
|      |             |                      | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 |            |                      |                 |
| 1    | 16106001    | AARTHI GR            | 20      | 20      | 20      | 16      |         | 20      | 20      | 20      | 16      |         | 20      | 20      | 20      | 16      |         | 76         | 2                    | Y               |
| 2    | 16106002    | ABHINANDH M          | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 100        | 3                    | Y               |
| 3    | 16106003    | ABHIVARNA C          | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y               |
| 4    | 16106004    | ABISHA.B             | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y               |
| 5    | 16106005    | ADITHYA NATHAN.B     | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 100        | 3                    | Y               |
| 6    | 16106006    | AKHAASH A            | 20      | 15      | 15      | 0       |         | 20      | 15      | 15      | 0       |         | 20      | 15      | 15      |         |         | 50         | 0                    |                 |
| 7    | 16106007    | AMISHA VERMA         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y               |
| 8    | 16106009    | ARAVINDRAJ G         | 25      | 24      | 25      | 25      |         | 25      | 24      | 25      | 25      |         | 25      | 24      | 25      | 25      |         | 99         | 3                    | Y               |
| 9    | 16106011    | ARUN RAJESH KANNAN I | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y               |
| 10   | 16106012    | ASWIN KRRISHNAN.S    | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y               |
| 11   | 16106013    | AVINASH P            | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y               |
| 12   | 16106014    | BALAMURUGAN.P        | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y               |
| 13   | 16106015    | BASKAR R             | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y               |
| 14   | 16106016    | BAVITHRA MEENA .V    | 20      | 15      | 15      | 12      |         | 20      | 15      | 15      | 12      |         | 20      | 15      | 15      | 12      |         | 62         | 1                    | Y               |
| 15   | 16106017    | BENITA S             | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y               |
| 16   | 16106018    | CYNTHIA SOPHIE R     | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y               |
| 17   | 16106019    | DEEBIKA S            | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 84         | 3                    | Y               |
| 18   | 16106020    | DEVARAJ V            | 20      | 20      | 20      | 28      |         | 20      | 20      | 20      | 28      |         | 20      | 20      | 20      | 28      |         | 88         | 3                    | Y               |
| 19   | 16106021    | DHANALAKSHMI A       | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y               |
| 20   | 16106022    | DHANYA VARSHINI V    | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 100        | 3                    | Y               |
| 21   | 16106023    | DHIVAGAR V           | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 100        | 3                    | Y               |
| 22   | 16106024    | DHIYANESH R          | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 84         | 3                    | Y               |
| 23   | 16106025    | DINA CYNTHYA R       | 20      | 20      | 20      | 18      |         | 20      | 20      | 20      | 18      |         | 20      | 20      | 20      | 18      |         | 78         | 2                    | Y               |
| 24   | 16106026    | DINESH S V           | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y               |

| S.No                                 | Univ Reg No | Name                   | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 | Percentage | Score on Grade Scale | Target $\geq$ : 60 % |
|--------------------------------------|-------------|------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------------|----------------------|----------------------|
| 25                                   | 16106027    | FARHANAH.M.S           | 20      | 15      | 15      | 0       |         | 20      | 15      | 15      | 0       |         | 20      | 15      | 15      |         |         | 50         | 0                    |                      |
| 26                                   | 16106029    | GANESA MOORTHY         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                    |
| 27                                   | 16106030    | GAYATHRI .S            | 25      | 24      | 25      | 25      |         | 25      | 24      | 25      | 25      |         | 25      | 24      | 25      | 25      |         | 99         | 3                    | Y                    |
| 28                                   | 16106031    | GIRITHARAKARTHIKEYAN M | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                    |
| 29                                   | 16106032    | GOUDAM M               | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                    |
| 30                                   | 16106033    | GOWTHAM R              | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 84         | 3                    | Y                    |
| 31                                   | 16106034    | HAREESH KUMAR T S      | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 84         | 3                    | Y                    |
| 32                                   | 16106035    | HARI PRASAD P          | 20      | 20      | 20      | 14      |         | 20      | 20      | 20      | 14      |         | 20      | 20      | 20      | 14      |         | 74         | 2                    | Y                    |
| 33                                   | 16106036    | HARIRAM P S            | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                    |
| 34                                   | 16106037    | HARISH N               | 20      | 20      | 20      | 16      |         | 20      | 20      | 20      | 16      |         | 20      | 20      | 20      | 16      |         | 76         | 2                    | Y                    |
| 35                                   | 16106038    | HARISH V               | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 100        | 3                    | Y                    |
| 36                                   | 16106039    | HARSHA V               | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                    |
| 37                                   | 16106040    | HARSHINI M S           | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 84         | 3                    | Y                    |
| 38                                   | 16106041    | HEMA PREETHI D         | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 84         | 3                    | Y                    |
| 39                                   | 16106042    | INDHUJA A              | 20      | 20      | 20      | 28      |         | 20      | 20      | 20      | 28      |         | 20      | 20      | 20      | 28      |         | 88         | 3                    | Y                    |
| 41                                   | 16106043    | JANANI A               | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                    |
| 41                                   | 16106044    | JAYAKUMAR .S           | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 84         | 3                    | Y                    |
| 42                                   | 16106045    | JAYA PRAKASH L         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                    |
| 43                                   | 16106046    | JAYASHREE J            | 20      | 20      | 20      | 20      |         | 20      | 20      | 20      | 20      |         | 20      | 20      | 20      | 20      |         | 80         | 3                    | Y                    |
| 44                                   | 16106047    | JAYSHREE.K             | 20      | 20      | 20      | 16      |         | 20      | 20      | 20      | 16      |         | 20      | 20      | 20      | 16      |         | 76         | 2                    | Y                    |
| 45                                   | 16106048    | JEEVA P                | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 100        | 3                    | Y                    |
| 46                                   | 16106801    | ADITHVATHSHAN R        | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                    |
| 47                                   | 16106803    | MAHENDRAN.P            | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                    |
| Total Number of students             |             |                        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         | 47         |                      |                      |
| Number of students Attained          |             |                        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         | 47         |                      |                      |
| Percentage of Attainment             |             |                        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         | 100        |                      |                      |
| Attainment Level of Course Outcome 2 |             |                        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         | 3          |                      |                      |

Faculty Signature  
[R.Vanitha ]

HOD  
[ Dr.P.Rajeswari]



**HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY**  
 Valley Campus, Pollachi Highway, Coimbatore - 641032  
**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING**  
**COURSE OUTCOME 3**

COURSE NAME & CODE : 16EC7001 EMBEDDED SYSTEM LABORATORY

SECTION : A

Batch : 2016 - 2020

Name of the Faculty : R VANITHA

Total Strength : 47

| S.No | Univ Reg No | Name                 | Ex 5    |         |         |         |         | EX6     |         |         |         |         | Average |         |         |         |         | Percentage | Score on Grade Scale | Target ≥ : 60 % |
|------|-------------|----------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------------|----------------------|-----------------|
|      |             |                      | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 |            |                      |                 |
| 1    | 16106001    | AARTHI GR            | 20      | 20      | 20      | 16      |         | 20      | 20      | 20      | 16      |         | 20      | 20      | 20      | 16      |         | 76         | 2                    | Y               |
| 2    | 16106002    | ABHINANDH M          | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 100        | 3                    | Y               |
| 3    | 16106003    | ABHIVARNA C          | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y               |
| 4    | 16106004    | ABISHA.B             | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y               |
| 5    | 16106005    | ADITHYA NATHAN.B     | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 100        | 3                    | Y               |
| 6    | 16106006    | AKHAASH A            | 20      | 15      | 15      | 0       |         | 20      | 15      | 15      | 0       |         | 20      | 15      | 15      |         |         | 50         | 0                    |                 |
| 7    | 16106007    | AMISHA VERMA         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y               |
| 8    | 16106009    | ARAVINDRAJ G         | 25      | 24      | 25      | 25      |         | 25      | 24      | 25      | 25      |         | 25      | 24      | 25      | 25      |         | 99         | 3                    | Y               |
| 9    | 16106011    | ARUN RAJESH KANNAN I | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y               |
| 10   | 16106012    | ASWIN KRRISHNAN.S    | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y               |
| 11   | 16106013    | AVINASH P            | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y               |
| 12   | 16106014    | BALAMURUGAN.P        | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y               |
| 13   | 16106015    | BASKAR R             | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y               |
| 14   | 16106016    | BAVITHRA MEENA .V    | 20      | 15      | 15      | 12      |         | 20      | 15      | 15      | 12      |         | 20      | 15      | 15      | 12      |         | 62         | 1                    | Y               |
| 15   | 16106017    | BENITA S             | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y               |
| 16   | 16106018    | CYNTHIA SOPHIE R     | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y               |
| 17   | 16106019    | DEEBIKA S            | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 84         | 3                    | Y               |
| 18   | 16106020    | DEVARAJ V            | 20      | 20      | 20      | 28      |         | 20      | 20      | 20      | 28      |         | 20      | 20      | 20      | 28      |         | 88         | 3                    | Y               |
| 19   | 16106021    | DHANALAKSHMI A       | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y               |
| 20   | 16106022    | DHANYA VARSHINI V    | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 100        | 3                    | Y               |
| 21   | 16106023    | DHIVAGAR V           | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 100        | 3                    | Y               |
| 22   | 16106024    | DHIYANESH R          | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 84         | 3                    | Y               |

| S.No                                 | Univ Reg No | Name                   | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 | Percentage | Score on Grade Scale | Target $\geq$ 60 % |
|--------------------------------------|-------------|------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------------|----------------------|--------------------|
| 23                                   | 16106025    | DINA CYNTHYA R         | 20      | 20      | 20      | 18      |         | 20      | 20      | 20      | 18      |         | 20      | 20      | 20      | 18      |         | 78         | 2                    | Y                  |
| 24                                   | 16106026    | DINESH S V             | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                  |
| 25                                   | 16106027    | FARHANAH.M.S           | 20      | 15      | 15      | 0       |         | 20      | 15      | 15      | 0       |         | 20      | 15      | 15      |         |         | 50         | 0                    |                    |
| 26                                   | 16106029    | GANESA MOORTHY         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                  |
| 27                                   | 16106030    | GAYATHRI .S            | 25      | 24      | 25      | 25      |         | 25      | 24      | 25      | 25      |         | 25      | 24      | 25      | 25      |         | 99         | 3                    | Y                  |
| 28                                   | 16106031    | GIRITHARAKARTHIKEYAN M | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                  |
| 29                                   | 16106032    | GOUDAM M               | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                  |
| 30                                   | 16106033    | GOWTHAM R              | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 84         | 3                    | Y                  |
| 31                                   | 16106034    | HAREESH KUMAR T S      | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 84         | 3                    | Y                  |
| 32                                   | 16106035    | HARI PRASAD P          | 20      | 20      | 20      | 14      |         | 20      | 20      | 20      | 14      |         | 20      | 20      | 20      | 14      |         | 74         | 2                    | Y                  |
| 33                                   | 16106036    | HARIRAM P S            | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                  |
| 34                                   | 16106037    | HARISH N               | 20      | 20      | 20      | 16      |         | 20      | 20      | 20      | 16      |         | 20      | 20      | 20      | 16      |         | 76         | 2                    | Y                  |
| 35                                   | 16106038    | HARISH V               | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 100        | 3                    | Y                  |
| 36                                   | 16106039    | HARSHA V               | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                  |
| 37                                   | 16106040    | HARSHINI M S           | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 84         | 3                    | Y                  |
| 38                                   | 16106041    | HEMA PREETHI D         | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 84         | 3                    | Y                  |
| 39                                   | 16106042    | INDHUJA A              | 20      | 20      | 20      | 28      |         | 20      | 20      | 20      | 28      |         | 20      | 20      | 20      | 28      |         | 88         | 3                    | Y                  |
| 41                                   | 16106043    | JANANI A               | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                  |
| 41                                   | 16106044    | JAYAKUMAR .S           | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 84         | 3                    | Y                  |
| 42                                   | 16106045    | JAYA PRAKASH L         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                  |
| 43                                   | 16106046    | JAYASHREE J            | 20      | 20      | 20      | 20      |         | 20      | 20      | 20      | 20      |         | 20      | 20      | 20      | 20      |         | 80         | 3                    | Y                  |
| 44                                   | 16106047    | JAYSHREE.K             | 20      | 20      | 20      | 16      |         | 20      | 20      | 20      | 16      |         | 20      | 20      | 20      | 16      |         | 76         | 2                    | Y                  |
| 45                                   | 16106048    | JEEVA P                | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 100        | 3                    | Y                  |
| 46                                   | 16106801    | ADITHVATHSHAN R        | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                  |
| 47                                   | 16106803    | MAHENDRAN.P            | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                  |
| Total Number of students             |             |                        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         | 47         |                      |                    |
| Number of students Attained          |             |                        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         | 47         |                      |                    |
| Percentage of Attainment             |             |                        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         | 100        |                      |                    |
| Attainment Level of Course Outcome 3 |             |                        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         | 3          |                      |                    |

| S.No | Univ Reg No | Name | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 | Percentage | Score on Grade Scale | Target $\geq$ : 60 % |
|------|-------------|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------------|----------------------|----------------------|
|------|-------------|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------------|----------------------|----------------------|

Faculty Signature  
[R.Vanitha ]

HOD  
[ Dr.P.Rajeswari]



**HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY**  
 Valley Campus, Pollachi Highway, Coimbatore - 641032  
**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING**  
**COURSE OUTCOME 4**

COURSE NAME & CODE : 16EC7001 EMBEDDED SYSTEM LABORATORY

SECTION : A

Batch : 2016 - 2020

Name of the Faculty : R VANITHA

Total Strength : 47

| S.No | Univ Reg No | Name                 | Ex 7    |         |         |         |         | EX8     |         |         |         |         | Average |         |         |         |         | Percentage | Score on Grade Scale | Target $\geq$ : 60 % |
|------|-------------|----------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------------|----------------------|----------------------|
|      |             |                      | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 |            |                      |                      |
| 1    | 16106001    | AARTHI GR            | 20      | 20      | 20      | 16      |         | 20      | 20      | 20      | 16      |         | 20      | 20      | 20      | 16      |         | 76         | 2                    | Y                    |
| 2    | 16106002    | ABHINANDH M          | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 100        | 3                    | Y                    |
| 3    | 16106003    | ABHIVARNA C          | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                    |
| 4    | 16106004    | ABISHA.B             | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                    |
| 5    | 16106005    | ADITHYA NATHAN.B     | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 100        | 3                    | Y                    |
| 6    | 16106006    | AKHAASH A            | 20      | 15      | 15      | 0       |         | 20      | 15      | 15      | 0       |         | 20      | 15      | 15      |         |         | 50         | 0                    |                      |
| 7    | 16106007    | AMISHA VERMA         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                    |
| 8    | 16106009    | ARAVINDRAJ G         | 25      | 24      | 25      | 25      |         | 25      | 24      | 25      | 25      |         | 25      | 24      | 25      | 25      |         | 99         | 3                    | Y                    |
| 9    | 16106011    | ARUN RAJESH KANNAN I | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                    |
| 10   | 16106012    | ASWIN KRRISHNAN.S    | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                    |
| 11   | 16106013    | AVINASH P            | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                    |
| 12   | 16106014    | BALAMURUGAN.P        | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                    |
| 13   | 16106015    | BASKAR R             | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                    |
| 14   | 16106016    | BAVITHRA MEENA .V    | 20      | 15      | 15      | 12      |         | 20      | 15      | 15      | 12      |         | 20      | 15      | 15      | 12      |         | 62         | 1                    | Y                    |
| 15   | 16106017    | BENITA S             | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                    |
| 16   | 16106018    | CYNTHIA SOPHIE R     | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                    |
| 17   | 16106019    | DEEBIKA S            | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 84         | 3                    | Y                    |
| 18   | 16106020    | DEVARAJ V            | 20      | 20      | 20      | 28      |         | 20      | 20      | 20      | 28      |         | 20      | 20      | 20      | 28      |         | 88         | 3                    | Y                    |
| 19   | 16106021    | DHANALAKSHMI A       | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                    |
| 20   | 16106022    | DHANYA VARSHINI V    | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 100        | 3                    | Y                    |
| 21   | 16106023    | DHIVAGAR V           | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 100        | 3                    | Y                    |
| 22   | 16106024    | DHIYANESH R          | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 84         | 3                    | Y                    |

| S.No                                 | Univ Reg No | Name                   | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 | Percentage | Score on Grade Scale | Target $\geq$ 60 % |
|--------------------------------------|-------------|------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------------|----------------------|--------------------|
| 23                                   | 16106025    | DINA CYNTHYA R         | 20      | 20      | 20      | 18      |         | 20      | 20      | 20      | 18      |         | 20      | 20      | 20      | 18      |         | 78         | 2                    | Y                  |
| 24                                   | 16106026    | DINESH S V             | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                  |
| 25                                   | 16106027    | FARHANAH.M.S           | 20      | 15      | 15      | 0       |         | 20      | 15      | 15      | 0       |         | 20      | 15      | 15      |         |         | 50         | 0                    |                    |
| 26                                   | 16106029    | GANESA MOORTHY         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                  |
| 27                                   | 16106030    | GAYATHRI .S            | 25      | 24      | 25      | 25      |         | 25      | 24      | 25      | 25      |         | 25      | 24      | 25      | 25      |         | 99         | 3                    | Y                  |
| 28                                   | 16106031    | GIRITHARAKARTHIKEYAN M | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                  |
| 29                                   | 16106032    | GOUDAM M               | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                  |
| 30                                   | 16106033    | GOWTHAM R              | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 84         | 3                    | Y                  |
| 31                                   | 16106034    | HAREESH KUMAR T S      | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 84         | 3                    | Y                  |
| 32                                   | 16106035    | HARI PRASAD P          | 20      | 20      | 20      | 14      |         | 20      | 20      | 20      | 14      |         | 20      | 20      | 20      | 14      |         | 74         | 2                    | Y                  |
| 33                                   | 16106036    | HARIRAM P S            | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                  |
| 34                                   | 16106037    | HARISH N               | 20      | 20      | 20      | 16      |         | 20      | 20      | 20      | 16      |         | 20      | 20      | 20      | 16      |         | 76         | 2                    | Y                  |
| 35                                   | 16106038    | HARISH V               | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 100        | 3                    | Y                  |
| 36                                   | 16106039    | HARSHA V               | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                  |
| 37                                   | 16106040    | HARSHINI M S           | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 84         | 3                    | Y                  |
| 38                                   | 16106041    | HEMA PREETHI D         | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 84         | 3                    | Y                  |
| 39                                   | 16106042    | INDHUJA A              | 20      | 20      | 20      | 28      |         | 20      | 20      | 20      | 28      |         | 20      | 20      | 20      | 28      |         | 88         | 3                    | Y                  |
| 41                                   | 16106043    | JANANI A               | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                  |
| 41                                   | 16106044    | JAYAKUMAR .S           | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 84         | 3                    | Y                  |
| 42                                   | 16106045    | JAYA PRAKASH L         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                  |
| 43                                   | 16106046    | JAYASHREE J            | 20      | 20      | 20      | 20      |         | 20      | 20      | 20      | 20      |         | 20      | 20      | 20      | 20      |         | 80         | 3                    | Y                  |
| 44                                   | 16106047    | JAYSHREE.K             | 20      | 20      | 20      | 16      |         | 20      | 20      | 20      | 16      |         | 20      | 20      | 20      | 16      |         | 76         | 2                    | Y                  |
| 45                                   | 16106048    | JEEVA P                | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 100        | 3                    | Y                  |
| 46                                   | 16106801    | ADITHVATHSHAN R        | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                  |
| 47                                   | 16106803    | MAHENDRAN.P            | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                  |
| Total Number of students             |             |                        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         | 47         |                      |                    |
| Number of students Attained          |             |                        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         | 47         |                      |                    |
| Percentage of Attainment             |             |                        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         | 100        |                      |                    |
| Attainment Level of Course Outcome 4 |             |                        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         | 3          |                      |                    |

| S.No | Univ Reg No | Name | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 | Percentage | Score on Grade Scale | Target $\geq$ : 60 % |
|------|-------------|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------------|----------------------|----------------------|
|------|-------------|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------------|----------------------|----------------------|

Faculty Signature  
[R.Vanitha ]

HOD  
[ Dr.P.Rajeswari]



**HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY**  
 Valley Campus, Pollachi Highway, Coimbatore - 641032  
**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING**  
**COURSE OUTCOME 5**

COURSE NAME & CODE : 16EC7001 EMBEDDED SYSTEM LABORATORY

SECTION : A

Batch : 2016 - 2020

Name of the Faculty : R VANITHA

Total Strength : 47

| S.No | Univ Reg No | Name                 | Ex 1    |         |         |         |         | EX 10   |         |         |         |         | Average |         |         |         |         | Percentage | Score on Grade Scale | Target $\geq$ : 60 % |
|------|-------------|----------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------------|----------------------|----------------------|
|      |             |                      | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 |            |                      |                      |
| 1    | 16106001    | AARTHI GR            | 20      | 20      | 20      | 16      |         | 20      | 20      | 20      | 16      |         | 20      | 20      | 20      | 16      |         | 76         | 2                    | Y                    |
| 2    | 16106002    | ABHINANDH M          | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 100        | 3                    | Y                    |
| 3    | 16106003    | ABHIVARNA C          | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                    |
| 4    | 16106004    | ABISHA.B             | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                    |
| 5    | 16106005    | ADITHYA NATHAN.B     | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 100        | 3                    | Y                    |
| 6    | 16106006    | AKHAASH A            | 20      | 15      | 15      | 0       |         | 20      | 15      | 15      | 0       |         | 20      | 15      | 15      |         |         | 50         | 0                    |                      |
| 7    | 16106007    | AMISHA VERMA         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                    |
| 8    | 16106009    | ARAVINDRAJ G         | 25      | 24      | 25      | 25      |         | 25      | 24      | 25      | 25      |         | 25      | 24      | 25      | 25      |         | 99         | 3                    | Y                    |
| 9    | 16106011    | ARUN RAJESH KANNAN I | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                    |
| 10   | 16106012    | ASWIN KRRISHNAN.S    | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                    |
| 11   | 16106013    | AVINASH P            | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                    |
| 12   | 16106014    | BALAMURUGAN.P        | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                    |
| 13   | 16106015    | BASKAR R             | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                    |
| 14   | 16106016    | BAVITHRA MEENA .V    | 20      | 15      | 15      | 12      |         | 20      | 15      | 15      | 12      |         | 20      | 15      | 15      | 12      |         | 62         | 1                    | Y                    |
| 15   | 16106017    | BENITA S             | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                    |
| 16   | 16106018    | CYNTHIA SOPHIE R     | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                    |
| 17   | 16106019    | DEEBIKA S            | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 84         | 3                    | Y                    |
| 18   | 16106020    | DEVARAJ V            | 20      | 20      | 20      | 28      |         | 20      | 20      | 20      | 28      |         | 20      | 20      | 20      | 28      |         | 88         | 3                    | Y                    |
| 19   | 16106021    | DHANALAKSHMI A       | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                    |
| 20   | 16106022    | DHANYA VARSHINI V    | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 100        | 3                    | Y                    |
| 21   | 16106023    | DHIVAGAR V           | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 100        | 3                    | Y                    |
| 22   | 16106024    | DHIYANESH R          | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 84         | 3                    | Y                    |

| S.No                                 | Univ Reg No | Name                   | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 | Percentage | Score on Grade Scale | Target $\geq$ 60 % |
|--------------------------------------|-------------|------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------------|----------------------|--------------------|
| 23                                   | 16106025    | DINA CYNTHYA R         | 20      | 20      | 20      | 18      |         | 20      | 20      | 20      | 18      |         | 20      | 20      | 20      | 18      |         | 78         | 2                    | Y                  |
| 24                                   | 16106026    | DINESH S V             | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                  |
| 25                                   | 16106027    | FARHANAH.M.S           | 20      | 15      | 15      | 0       |         | 20      | 15      | 15      | 0       |         | 20      | 15      | 15      |         |         | 50         | 0                    |                    |
| 26                                   | 16106029    | GANESA MOORTHY         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                  |
| 27                                   | 16106030    | GAYATHRI .S            | 25      | 24      | 25      | 25      |         | 25      | 24      | 25      | 25      |         | 25      | 24      | 25      | 25      |         | 99         | 3                    | Y                  |
| 28                                   | 16106031    | GIRITHARAKARTHIKEYAN M | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                  |
| 29                                   | 16106032    | GOUDAM M               | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                  |
| 30                                   | 16106033    | GOWTHAM R              | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 84         | 3                    | Y                  |
| 31                                   | 16106034    | HAREESH KUMAR T S      | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 84         | 3                    | Y                  |
| 32                                   | 16106035    | HARI PRASAD P          | 20      | 20      | 20      | 14      |         | 20      | 20      | 20      | 14      |         | 20      | 20      | 20      | 14      |         | 74         | 2                    | Y                  |
| 33                                   | 16106036    | HARIRAM P S            | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                  |
| 34                                   | 16106037    | HARISH N               | 20      | 20      | 20      | 16      |         | 20      | 20      | 20      | 16      |         | 20      | 20      | 20      | 16      |         | 76         | 2                    | Y                  |
| 35                                   | 16106038    | HARISH V               | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 100        | 3                    | Y                  |
| 36                                   | 16106039    | HARSHA V               | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                  |
| 37                                   | 16106040    | HARSHINI M S           | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 84         | 3                    | Y                  |
| 38                                   | 16106041    | HEMA PREETHI D         | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 84         | 3                    | Y                  |
| 39                                   | 16106042    | INDHUJA A              | 20      | 20      | 20      | 28      |         | 20      | 20      | 20      | 28      |         | 20      | 20      | 20      | 28      |         | 88         | 3                    | Y                  |
| 41                                   | 16106043    | JANANI A               | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                  |
| 41                                   | 16106044    | JAYAKUMAR .S           | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 20      | 20      | 20      | 24      |         | 84         | 3                    | Y                  |
| 42                                   | 16106045    | JAYA PRAKASH L         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                  |
| 43                                   | 16106046    | JAYASHREE J            | 20      | 20      | 20      | 20      |         | 20      | 20      | 20      | 20      |         | 20      | 20      | 20      | 20      |         | 80         | 3                    | Y                  |
| 44                                   | 16106047    | JAYSHREE.K             | 20      | 20      | 20      | 16      |         | 20      | 20      | 20      | 16      |         | 20      | 20      | 20      | 16      |         | 76         | 2                    | Y                  |
| 45                                   | 16106048    | JEEVA P                | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 25      | 25      | 25      | 25      |         | 100        | 3                    | Y                  |
| 46                                   | 16106801    | ADITHVATHSHAN R        | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                  |
| 47                                   | 16106803    | MAHENDRAN.P            | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 25      | 25      | 25      | 21      |         | 96         | 3                    | Y                  |
| Total Number of students             |             |                        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         | 47         |                      |                    |
| Number of students Attained          |             |                        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         | 47         |                      |                    |
| Percentage of Attainment             |             |                        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         | 100        |                      |                    |
| Attainment Level of Course Outcome 5 |             |                        |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         | 3          |                      |                    |

| S.No | Univ Reg No | Name | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 | Rubric1 | Rubric2 | Rubric3 | Rubric4 | Rubric5 | Percentage | Score on Grade Scale | Target $\geq$ : 60 % |
|------|-------------|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------------|----------------------|----------------------|
|------|-------------|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------------|----------------------|----------------------|

Faculty Signature  
[R.Vanitha ]

HOD  
[ Dr.P.Rajeswari]



## HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY

Valley Campus, Pollachi Highway, Coimbatore - 641032

### DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

#### Model MARKS

**Each Question Expected Level of Attainment - : 60%**

COURSE NAME & CODE : 16EC7001 EMBEDDED SYSTEM LABORATORY

SECTION : A

Batch : 2016 - 2020

Name of the Faculty : R VANITHA

Total Strength : 47

| S.No | Univ Reg No | Name                 | GRADE | Target $\geq$ 60 % |
|------|-------------|----------------------|-------|--------------------|
| 1    | 16106001    | AARTHI GR            | 60    | Y                  |
| 2    | 16106002    | ABHINANDH M          | 92    | Y                  |
| 3    | 16106003    | ABHIVARNA C          | 75    | Y                  |
| 4    | 16106004    | ABISHA.B             | 96    | Y                  |
| 5    | 16106005    | ADITHYA NATHAN.B     | 92    | Y                  |
| 6    | 16106006    | AKHAASH A            | 55    |                    |
| 7    | 16106007    | AMISHA VERMA         | 92    | Y                  |
| 8    | 16106009    | ARAVINDRAJ G         | 94    | Y                  |
| 9    | 16106011    | ARUN RAJESH KANNAN I | 85    | Y                  |
| 10   | 16106012    | ASWIN KRRISHNAN.S    | 80    | Y                  |
| 11   | 16106013    | AVINASH P            | 60    | Y                  |
| 12   | 16106014    | BALAMURUGAN.P        | 90    | Y                  |
| 13   | 16106015    | BASKAR R             | 72    | Y                  |
| 14   | 16106016    | BAVITHRA MEENA .V    | 92    | Y                  |
| 15   | 16106017    | BENITA S             | 74    | Y                  |
| 16   | 16106018    | CYNTHIA SOPHIE R     | 60    | Y                  |
| 17   | 16106019    | DEEBIKA S            | 70    | Y                  |
| 18   | 16106020    | DEVARAJ V            | 86    | Y                  |

| S.No | Univ Reg No | Name                   | GRADE | Target ≥ : 60 % |
|------|-------------|------------------------|-------|-----------------|
| 19   | 16106021    | DHANALAKSHMI A         | 92    | Y               |
| 20   | 16106022    | DHANYA VARSHINI V      | 95    | Y               |
| 21   | 16106023    | DHIVAGAR V             | 60    | Y               |
| 22   | 16106024    | DHIYANESH R            | 74    | Y               |
| 23   | 16106025    | DINA CYNTHYA R         | 91    | Y               |
| 24   | 16106026    | DINESH S V             | 52    |                 |
| 25   | 16106027    | FARHANAH.M.S           | 92    | Y               |
| 26   | 16106029    | GANESA MOORTHY         | 72    | Y               |
| 27   | 16106030    | GAYATHRI .S            | 94    | Y               |
| 28   | 16106031    | GIRITHARAKARTHIKEYAN M | 82    | Y               |
| 29   | 16106032    | GOUDAM M               | 80    | Y               |
| 30   | 16106033    | GOWTHAM R              | 62    | Y               |
| 31   | 16106034    | HAREESH KUMAR T S      | 82    | Y               |
| 32   | 16106035    | HARI PRASAD P          | 70    | Y               |
| 33   | 16106036    | HARIRAM P S            | 74    | Y               |
| 34   | 16106037    | HARISH N               | 72    | Y               |
| 35   | 16106038    | HARISH V               | 62    | Y               |
| 36   | 16106039    | HARSHA V               | 80    | Y               |
| 37   | 16106040    | HARSHINI M S           | 80    | Y               |
| 38   | 16106041    | HEMA PREETHI D         | 84    | Y               |
| 39   | 16106042    | INDHUJA A              | 82    | Y               |
| 41   | 16106043    | JANANI A               | 88    | Y               |

| S.No                        | Univ Reg No | Name            | GRADE | Target $\geq$ : 60 % |
|-----------------------------|-------------|-----------------|-------|----------------------|
| 41                          | 16106044    | JAYAKUMAR .S    | 74    | Y                    |
| 42                          | 16106045    | JAYA PRAKASH L  | 0     |                      |
| 43                          | 16106046    | JAYASHREE J     | 95    | Y                    |
| 44                          | 16106047    | JAYSHREE.K      | 92    | Y                    |
| 45                          | 16106048    | JEEVA P         | 65    | Y                    |
| 46                          | 16106801    | ADITHVATHSHAN R | 72    | Y                    |
| 47                          | 16106803    | MAHENDRAN.P     | 80    | Y                    |
| Total Number of students    |             |                 | 47    |                      |
| Number of students Attained |             |                 | 44    |                      |
| Percentage of Attainment    |             |                 | 93.62 |                      |
| University Attainment Level |             |                 | 3     |                      |

Faculty Signature  
[R.Vaniha ]

HOD  
[ Dr.P.Rajeswari]



## HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY

Valley Campus, Pollachi Highway, Coimbatore - 641032

### DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

End Semester Marks

Each Question Expected Level of Attainment - : 60%

COURSE NAME & CODE : 16EC7001 EMBEDDED SYSTEM LABORATORY

SECTION : A

Batch : 2016 - 2020

Name of the Faculty : R VANITHA

Total Strength : 47

| S.No | Univ Reg No | Name                 | GRADE | Target $\geq$ 60 % |
|------|-------------|----------------------|-------|--------------------|
| 1    | 16106001    | AARTHI GR            | A+    | Y                  |
| 2    | 16106002    | ABHINANDH M          | O     | Y                  |
| 3    | 16106003    | ABHIVARNA C          | O     | Y                  |
| 4    | 16106004    | ABISHA.B             | O     | Y                  |
| 5    | 16106005    | ADITHYA NATHAN.B     | O     | Y                  |
| 6    | 16106006    | AKHAASH A            | A     | Y                  |
| 7    | 16106007    | AMISHA VERMA         | O     | Y                  |
| 8    | 16106009    | ARAVINDRAJ G         | O     | Y                  |
| 9    | 16106011    | ARUN RAJESH KANNAN I | O     | Y                  |
| 10   | 16106012    | ASWIN KRRISHNAN.S    | O     | Y                  |
| 11   | 16106013    | AVINASH P            | A     | Y                  |
| 12   | 16106014    | BALAMURUGAN.P        | O     | Y                  |
| 13   | 16106015    | BASKAR R             | A+    | Y                  |
| 14   | 16106016    | BAVITHRA MEENA .V    | O     | Y                  |
| 15   | 16106017    | BENITA S             | A+    | Y                  |
| 16   | 16106018    | CYNTHIA SOPHIE R     | A+    | Y                  |
| 17   | 16106019    | DEEBIKA S            | A+    | Y                  |
| 18   | 16106020    | DEVARAJ V            | O     | Y                  |

| S.No | Univ Reg No | Name                   | GRADE | Target ≥ : 60 % |
|------|-------------|------------------------|-------|-----------------|
| 19   | 16106021    | DHANALAKSHMI A         | O     | Y               |
| 20   | 16106022    | DHANYA VARSHINI V      | O     | Y               |
| 21   | 16106023    | DHIVAGAR V             | A+    | Y               |
| 22   | 16106024    | DHIYANESH R            | A+    | Y               |
| 23   | 16106025    | DINA CYNTHYA R         | O     | Y               |
| 24   | 16106026    | DINESH S V             | B+    | Y               |
| 25   | 16106027    | FARHANAH.M.S           | O     | Y               |
| 26   | 16106029    | GANESA MOORTHY         | A+    | Y               |
| 27   | 16106030    | GAYATHRI .S            | O     | Y               |
| 28   | 16106031    | GIRITHARAKARTHIKEYAN M | A+    | Y               |
| 29   | 16106032    | GOUDAM M               | A+    | Y               |
| 30   | 16106033    | GOWTHAM R              | O     | Y               |
| 31   | 16106034    | HAREESH KUMAR T S      | O     | Y               |
| 32   | 16106035    | HARI PRASAD P          | A     | Y               |
| 33   | 16106036    | HARIRAM P S            | O     | Y               |
| 34   | 16106037    | HARISH N               | A+    | Y               |
| 35   | 16106038    | HARISH V               | A+    | Y               |
| 36   | 16106039    | HARSHA V               | A     | Y               |
| 37   | 16106040    | HARSHINI M S           | O     | Y               |
| 38   | 16106041    | HEMA PREETHI D         | O     | Y               |
| 39   | 16106042    | INDHUJA A              | A     | Y               |
| 41   | 16106043    | JANANI A               | O     | Y               |

| S.No                        | Univ Reg No | Name            | GRADE | Target $\geq$ : 60 % |
|-----------------------------|-------------|-----------------|-------|----------------------|
| 41                          | 16106044    | JAYAKUMAR .S    | O     | Y                    |
| 42                          | 16106045    | JAYA PRAKASH L  | B+    | Y                    |
| 43                          | 16106046    | JAYASHREE J     | O     | Y                    |
| 44                          | 16106047    | JAYSHREE.K      | O     | Y                    |
| 45                          | 16106048    | JEEVA P         | A     | Y                    |
| 46                          | 16106801    | ADITHVATHSHAN R | A+    | Y                    |
| 47                          | 16106803    | MAHENDRAN.P     | B+    | Y                    |
| Total Number of students    |             |                 | 47    |                      |
| Number of students Attained |             |                 | 47    |                      |
| Percentage of Attainment    |             |                 | 100   |                      |
| University Attainment Level |             |                 | 3     |                      |

Faculty Signature  
[R.Vanitha ]

HOD  
[ Dr.P.Rajeswari ]



## HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY

Valley Campus, Pollachi Highway, Coimbatore - 641032

### DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

#### CO AND PO MAPPING

COURSE NAME & CODE : 16EC7001 EMBEDDED SYSTEM LABORATORY

Batch : 2016 - 2020

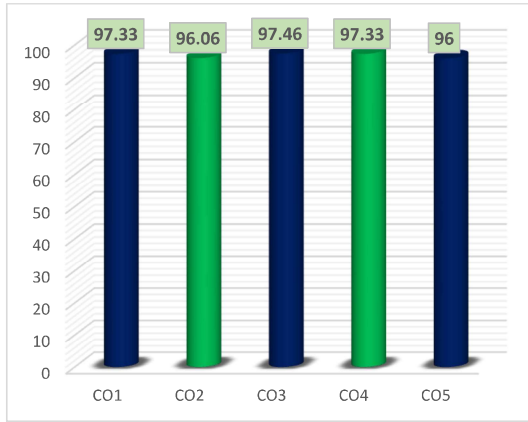
Name of the Faculty : R VANITHA

SECTION : A

| CO Attainment |                 |                 |               |                       |                     |              |             |               |              |                      |    |
|---------------|-----------------|-----------------|---------------|-----------------------|---------------------|--------------|-------------|---------------|--------------|----------------------|----|
| CO's          | EXP %<br>(100%) | Model<br>(100%) | INT<br>(50 %) | END<br>SEM<br>(100 %) | END<br>SEM<br>(50%) | DA<br>(100%) | DA<br>(80%) | IDA<br>(100%) | IDA<br>(20%) | Attainment<br>(100%) | AL |
| CO1           | 100.0           | 93.6            | 48.4          | 100.0                 | 50.0                | 98.4         | 78.73       | 93.0          | 18.6         | 97.3                 | 3  |
| CO2           | 100.0           | 93.6            | 48.4          | 100.0                 | 50.0                | 98.4         | 78.73       | 86.7          | 17.33        | 96.1                 | 3  |
| CO3           | 100.0           | 93.6            | 48.4          | 100.0                 | 50.0                | 98.4         | 78.73       | 93.7          | 18.73        | 97.5                 | 3  |
| CO4           | 100.0           | 93.6            | 48.4          | 100.0                 | 50.0                | 98.4         | 78.73       | 93.0          | 18.6         | 97.3                 | 3  |
| CO5           | 100.0           | 93.6            | 48.4          | 100.0                 | 50.0                | 98.4         | 78.73       | 86.3          | 17.27        | 96.0                 | 3  |

| CO-PO Mapping |     |     |     |     |     |     |     |     |     |      |      |      |      |      |  |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|--|
| CO's          | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |  |
| CO1           | 3   | 2   | 2   | 3   | 3   | 1   | 2   | 2   | 3   | 2    | 2    | 2    | 1    | 1    |  |
| CO2           | 3   | 2   | 3   | 2   | -   | -   | -   | -   | -   | -    | -    | -    | 2    | 2    |  |
| CO3           | -   | 3   | 3   | 2   | 2   | -   | 2   | 3   | 1   | -    | -    | -    | 3    | 3    |  |
| CO4           | -   | 1   | 1   | -   | -   | -   | -   | -   | -   | -    | -    | -    | 1    | 1    |  |
| CO5           | 3   | 3   | 2   | 2   | -   | -   | -   | -   | -   | -    | -    | 1    | 2    | 2    |  |

Graphical Representation - CO Attainment



| Scale       |                  |
|-------------|------------------|
| Weightage   | Attainment Level |
| >= 80 %     | 3                |
| >=70 & < 80 | 2                |
| >=60 & < 70 | 1                |

| PO Attainment |     |     |     |     |     |     |     |     |     |      |      |      |      |      |  |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|--|
| CO's          | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |  |
| CO1           | 3   | 2   | 2   | 3   | 3   | 1   | 2   | 2   | 3   | 2    | 2    | 2    | 1    | 1    |  |
| CO2           | 3   | 2   | 3   | 2   | -   | -   | -   | -   | -   | -    | -    | -    | 2    | 2    |  |
| CO3           | -   | 3   | 3   | 2   | 2   | -   | 2   | 3   | 1   | -    | -    | -    | 3    | 3    |  |
| CO4           | -   | 1   | 1   | -   | -   | -   | -   | -   | -   | -    | -    | -    | 1    | 1    |  |
| CO5           | 3   | 3   | 2   | 2   | -   | -   | -   | -   | -   | -    | -    | 1    | 2    | 2    |  |

3    2.2    2.2    2.3    2.5    1    2    2.5    2    2    2    1.5    1.8    1.8

\*DA - Direct Assessment

\*AL - Attainment Level

\*IDA - Indirect Assessment

Faculty Signature  
[R.Vanitha ]

HOD  
[ Dr.P.Rajeswari ]



## HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY

Valley Campus, Pollachi Highway, Coimbatore - 641032

### DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

#### Consolidated Internal Marks

COURSE NAME & CODE : 16EC7001 EMBEDDED SYSTEM LABORATORY

Batch : 2016 - 2020

SECTION : A

Total Strength : 47

Name of the Faculty : R VANITHA

| S.No | REG.No.  | Name                 | CO1<br>(100) | CO2<br>(100) | CO3<br>(100) | CO4<br>(100) | CO5<br>(100) | EXP<br>25 Marks | MODEL<br>(100) | MODEL<br>25 Marks | Total<br>25 Marks |
|------|----------|----------------------|--------------|--------------|--------------|--------------|--------------|-----------------|----------------|-------------------|-------------------|
| 1    | 16106001 | AARTHI GR            | 79           | 76           | 76           | 76           | 76           | 19.15           | 60             | 15                | 34.15             |
| 2    | 16106002 | ABHINANDH M          | 100          | 100          | 100          | 100          | 100          | 25              | 92             | 23                | 48                |
| 3    | 16106003 | ABHIVARNA C          | 92           | 96           | 96           | 96           | 96           | 23.8            | 75             | 18.75             | 42.55             |
| 4    | 16106004 | ABISHA.B             | 96           | 96           | 96           | 96           | 96           | 24              | 96             | 24                | 48                |
| 5    | 16106005 | ADITHYA NATHAN.B     | 100          | 100          | 100          | 100          | 100          | 25              | 92             | 23                | 48                |
| 6    | 16106006 | AKHAASH A            | 51.5         | 50           | 50           | 50           | 50           | 12.575          | 55             | 13.75             | 26.325            |
| 7    | 16106007 | AMISHA VERMA         | 96           | 96           | 96           | 96           | 96           | 24              | 92             | 23                | 47                |
| 8    | 16106009 | ARAVINDRAJ G         | 96           | 99           | 99           | 99           | 99           | 24.6            | 94             | 23.5              | 48.1              |
| 9    | 16106011 | ARUN RAJESH KANNAN I | 96           | 96           | 96           | 96           | 96           | 24              | 85             | 21.25             | 45.25             |
| 10   | 16106012 | ASWIN KRRISHNAN.S    | 96           | 96           | 96           | 96           | 96           | 24              | 80             | 20                | 44                |
| 11   | 16106013 | AVINASH P            | 96           | 96           | 96           | 96           | 96           | 24              | 60             | 15                | 39                |
| 12   | 16106014 | BALAMURUGAN.P        | 96           | 96           | 96           | 96           | 96           | 24              | 90             | 22.5              | 46.5              |
| 13   | 16106015 | BASKAR R             | 96           | 96           | 96           | 96           | 96           | 24              | 72             | 18                | 42                |
| 14   | 16106016 | BAVITHRA MEENA .V    | 62           | 62           | 62           | 62           | 62           | 15.5            | 92             | 23                | 38.5              |
| 15   | 16106017 | BENITA S             | 96           | 96           | 96           | 96           | 96           | 24              | 74             | 18.5              | 42.5              |
| 16   | 16106018 | CYNTHIA SOPHIE R     | 96           | 96           | 96           | 96           | 96           | 24              | 60             | 15                | 39                |
| 17   | 16106019 | DEEBIKA S            | 84           | 84           | 84           | 84           | 84           | 21              | 70             | 17.5              | 38.5              |
| 18   | 16106020 | DEVARAJ V            | 88           | 88           | 88           | 88           | 88           | 22              | 86             | 21.5              | 43.5              |
| 19   | 16106021 | DHANALAKSHMI A       | 96           | 96           | 96           | 96           | 96           | 24              | 92             | 23                | 47                |
| 20   | 16106022 | DHANYA VARSHINI V    | 100          | 100          | 100          | 100          | 100          | 25              | 95             | 23.75             | 48.75             |
| 21   | 16106023 | DHIVAGAR V           | 100          | 100          | 100          | 100          | 100          | 25              | 60             | 15                | 40                |
| 22   | 16106024 | DHIYANESH R          | 84           | 84           | 84           | 84           | 84           | 21              | 74             | 18.5              | 39.5              |
| 23   | 16106025 | DINA CYNTHYA R       | 78           | 78           | 78           | 78           | 78           | 19.5            | 91             | 22.75             | 42.25             |
| 24   | 16106026 | DINESH S V           | 96           | 96           | 96           | 96           | 96           | 24              | 52             | 13                | 37                |
| 25   | 16106027 | FARHANAH.M.S         | 50           | 50           | 50           | 50           | 50           | 12.5            | 92             | 23                | 35.5              |

| S.No | REG.No.  | Name                   | CO1<br>(100) | CO2<br>(100) | CO3<br>(100) | CO4<br>(100) | CO5<br>(100) | EXP<br>25 Marks | MODEL<br>(100) | MODEL<br>25 Marks | Total<br>25 Marks |
|------|----------|------------------------|--------------|--------------|--------------|--------------|--------------|-----------------|----------------|-------------------|-------------------|
| 26   | 16106029 | GANESA MOORTHY         | 96           | 96           | 96           | 96           | 96           | 24              | 72             | 18                | 42                |
| 27   | 16106030 | GAYATHRI .S            | 99           | 99           | 99           | 99           | 99           | 24.75           | 94             | 23.5              | 48.25             |
| 28   | 16106031 | GIRITHARAKARTHIKEYAN M | 92.5         | 96           | 96           | 96           | 96           | 23.825          | 82             | 20.5              | 44.325            |
| 29   | 16106032 | GOUDAM M               | 96           | 96           | 96           | 96           | 96           | 24              | 80             | 20                | 44                |
| 30   | 16106033 | GOWTHAM R              | 84           | 84           | 84           | 84           | 84           | 21              | 62             | 15.5              | 36.5              |
| 31   | 16106034 | HAREESH KUMAR T S      | 84           | 84           | 84           | 84           | 84           | 21              | 82             | 20.5              | 41.5              |
| 32   | 16106035 | HARI PRASAD P          | 74           | 74           | 74           | 74           | 74           | 18.5            | 70             | 17.5              | 36                |
| 33   | 16106036 | HARIRAM P S            | 96           | 96           | 96           | 96           | 96           | 24              | 74             | 18.5              | 42.5              |
| 34   | 16106037 | HARISH N               | 76           | 76           | 76           | 76           | 76           | 19              | 72             | 18                | 37                |
| 35   | 16106038 | HARISH V               | 100          | 100          | 100          | 100          | 100          | 25              | 62             | 15.5              | 40.5              |
| 36   | 16106039 | HARSHA V               | 96           | 96           | 96           | 96           | 96           | 24              | 80             | 20                | 44                |
| 37   | 16106040 | HARSHINI M S           | 84           | 84           | 84           | 84           | 84           | 21              | 80             | 20                | 41                |
| 38   | 16106041 | HEMA PREETHI D         | 84           | 84           | 84           | 84           | 84           | 21              | 84             | 21                | 42                |
| 39   | 16106042 | INDHUJA A              | 88           | 88           | 88           | 88           | 88           | 22              | 82             | 20.5              | 42.5              |
| 41   | 16106043 | JANANI A               | 96           | 96           | 96           | 96           | 96           | 24              | 88             | 22                | 46                |
| 41   | 16106044 | JAYAKUMAR .S           | 84           | 84           | 84           | 84           | 84           | 21              | 74             | 18.5              | 39.5              |
| 42   | 16106045 | JAYA PRAKASH L         | 96           | 96           | 96           | 96           | 96           | 24              | 0              | 0                 | 24                |
| 43   | 16106046 | JAYASHREE J            | 80           | 80           | 80           | 80           | 80           | 20              | 95             | 23.75             | 43.75             |
| 44   | 16106047 | JAYSHREE.K             | 76           | 76           | 76           | 76           | 76           | 19              | 92             | 23                | 42                |
| 45   | 16106048 | JEEVA P                | 100          | 100          | 100          | 100          | 100          | 25              | 65             | 16.25             | 41.25             |
| 46   | 16106801 | ADITHVATHSHAN R        | 96           | 96           | 96           | 96           | 96           | 24              | 72             | 18                | 42                |
| 47   | 16106803 | MAHENDRAN.P            | 96           | 96           | 96           | 96           | 96           | 24              | 80             | 20                | 44                |

Faculty Signature  
[R.Vanitha ]

HOD  
[ Dr.P.Rajeswari ]

DEAN  
[Dr.P.N Magudeswaran ]

*ANNEXURE V*

| ENTRY MAPPING OF COs and POs: |      |      |     |     |     |     |     |     |     |      |      |      |       |       |
|-------------------------------|------|------|-----|-----|-----|-----|-----|-----|-----|------|------|------|-------|-------|
| CO/PO                         | PO1  | PO2  | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO-1 | PSO-2 |
| CO1                           | 2    | 3    | 2   | 2   | 3   | 3   | 2   | 2   | 2   | 2    | 2    | 2    | 3     | 3     |
| CO2                           | 3    | 2    | 2   | 2   | 3   | 3   | 2   | 2   | 2   | 2    | 2    | 2    | 3     | 3     |
| CO3                           | 2    | 3    | 3   | 2   | 3   | 3   | 2   | 2   | 2   | 2    | 2    | 2    | 3     | 3     |
| AVG                           | 2.33 | 2.67 | 2.3 | 2   | 3   | 3   | 2   | 2   | 2   | 2    | 2    | 2    | 3     | 3     |

| Indirect Survey |           |      |      |              |
|-----------------|-----------|------|------|--------------|
| CO              | Excellent | Good | Poor | Percentage % |
| CO1             | 25        | 12   | 3    | 85           |
| CO2             | 25        | 5    | 1    | 92.3         |
| CO3             | 25        | 2    | 3    | 91           |
|                 |           |      |      |              |

|                                |   |
|--------------------------------|---|
| COURSE NAME & CODE             | 16EC6801 Mini Project                           |
| SECTION                        | C   |
| Name of the Faculty            | Suresh Kumar P                                  |
| Department                     | DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENG |
| Batch                          | 2016-2020                                       |
| Expected Level of Attainment - | 50%   |
|                                | No of students scores upto expected level       |
|                                | % of scoring above the attainment level         |

Faculty Signature  
Suresh Kumar P

HOD  
Dr.P.Rajeswari

DEAN  
Dr.P.N Magudeswaran

|                        |             |             | Total Strength 10 |         |         |         |         | Total Strength 10 |         |         |         |         | Total Strength 10 |             |         |         |         | 10         |         |             |          |
|------------------------|-------------|-------------|-------------------|---------|---------|---------|---------|-------------------|---------|---------|---------|---------|-------------------|-------------|---------|---------|---------|------------|---------|-------------|----------|
|                        |             |             | Total Attended 10 |         |         |         |         | Total Attended 10 |         |         |         |         | Total Attended 10 |             |         |         |         | 10         |         |             |          |
| INTERNAL TEST          |             |             | Review 1          |         |         |         |         | Review 2          |         |         |         |         | Review 3          |             |         |         |         | University |         |             |          |
| S.No                   | Univ Reg No | Name        | Rubri 1           | Rubri 2 | Rubri 3 | Rubri 4 | Rubri 5 | TOTAL SCORE       | Rubri 1 | Rubri 2 | Rubri 3 | Rubri 4 | Rubri 5           | TOTAL SCORE | Rubri 1 | Rubri 2 | Rubri 3 | Rubri 4    | Rubri 5 | TOTAL SCORE | ES Grade |
| Question Maximum Marks |             |             | 20                | 20      | 20      | 20      | 20      | 100               | 2       | 2       | 2       | 2       | 10                | 100         | 2       | 2       | 14      | 14         | 10      | 100         |          |
| 1                      | 16106098    | RAMSUNDAR S | 22                | 22      | 22      | 22      |         | 88                | 21      | 21      | 21      | 21      |                   | 84          | 22      | 22      | 22      | 22         |         | 88          | B+       |
| 2                      | 16106099    | RAMYA A     | 24                | 24      | 24      | 24      |         | 96                | 25      | 25      | 25      | 25      |                   | 100         | 24      | 24      | 24      | 24         |         | 96          | O        |
| 3                      | 16106100    | RAMYA R     | 23                | 23      | 23      | 23      |         | 92                | 22      | 22      | 22      | 22      |                   | 88          | 22      | 22      | 22      | 22         |         | 88          | A+       |
| 4                      | 16106101    | RATEESH S   | 18                | 18      | 18      | 18      |         | 72                | 18      | 18      | 18      | 18      |                   | 72          | 18      | 18      | 18      | 18         |         | 72          | O        |
| 5                      | 16106102    | RENUKA G    | 23                | 23      | 23      | 23      |         | 92                | 24      | 24      | 24      | 24      |                   | 96          | 24      | 24      | 24      | 24         |         | 96          | O        |
| 6                      | 16106103    | ROSHINI     | 24                | 24      | 24      | 24      |         | 96                | 24      | 24      | 24      | 24      |                   | 96          | 24      | 24      | 24      | 24         |         | 96          | O        |
| 7                      | 16106104    | RUPITHA S   | 22                | 22      | 22      | 22      |         | 88                | 22      | 22      | 22      | 22      |                   | 88          | 23      | 23      | 23      | 23         |         | 92          | O        |
| 8                      | 16106105    | SABAREESH S | 16                | 16      | 16      | 16      |         | 64                | 13      | 13      | 13      | 13      |                   | 52          | 16      | 16      | 16      | 16         |         | 64          | B        |
| 9                      | 16106106    | SAMEEM M    | 23                | 23      | 23      | 23      |         | 92                | 22      | 22      | 22      | 22      |                   | 88          | 23      | 23      | 23      | 23         |         | 92          | O        |
| 10                     | 16106144    | YUVAPRAKASH | 23                | 23      | 23      | 23      |         | 92                | 23      | 23      | 23      | 23      |                   | 92          | 23      | 23      | 23      | 23         |         | 92          | O        |



HICET

## HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY

Valley Campus, Pollachi Highway, Coimbatore - 641032

### DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

#### Review 1

COURSE NAME & CODE : 16EC6801 Mini Project

SECTION : C

Name of the Faculty : Suresh Kumar P

Batch : 2016-2020

Total Strength : 10

Total Attended : 10

| S.No                        | REG.No.  | Name          | Rubri 1 | Rubri 2 | Rubri 3 | Rubri 4 | Rubri 5 | Total | Score on Grade Scale | Taget >= 50% |
|-----------------------------|----------|---------------|---------|---------|---------|---------|---------|-------|----------------------|--------------|
| 1                           | 16106098 | RAMSUNDAR S   | 22      | 22      | 22      | 22      |         | 88    | 3                    | Y            |
| 2                           | 16106099 | RAMYA A       | 24      | 24      | 24      | 24      |         | 96    | 3                    | Y            |
| 3                           | 16106100 | RAMYA R       | 23      | 23      | 23      | 23      |         | 92    | 3                    | Y            |
| 4                           | 16106101 | RATEESH S     | 18      | 18      | 18      | 18      |         | 72    | 2                    | Y            |
| 5                           | 16106102 | RENUKA G      | 23      | 23      | 23      | 23      |         | 92    | 3                    | Y            |
| 6                           | 16106103 | ROSHINI       | 24      | 24      | 24      | 24      |         | 96    | 3                    | Y            |
| 7                           | 16106104 | RUPITHA S     | 22      | 22      | 22      | 22      |         | 88    | 3                    | Y            |
| 8                           | 16106105 | SABAREESH S   | 16      | 16      | 16      | 16      |         | 64    | 1                    | Y            |
| 9                           | 16106106 | SAMEEM M      | 23      | 23      | 23      | 23      |         | 92    | 3                    | Y            |
| 10                          | 16106144 | YUVAPRAKASH N | 23      | 23      | 23      | 23      |         | 92    | 3                    | Y            |
| Total Number of students    |          |               |         |         |         |         |         | 10    |                      |              |
| Number of students Attained |          |               |         |         |         |         |         | 10    |                      |              |
| Percentage of Attainment    |          |               |         |         |         |         |         | 100   |                      |              |

Faculty Signature

Suresh Kumar P

HOD

Dr.P.Rajeswari

DEAN

Dr.P.N Magudeswaran



HICET

## HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY

Valley Campus, Pollachi Highway, Coimbatore - 641032

### DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

#### Review 2

COURSE NAME & CODE : 16EC6801 Mini Project

SECTION : C

Name of the Faculty : Suresh Kumar P

Batch : 2016-2020

Total Strength : 10

Total Attended : 10

| S.No                        | REG.No.  | Name          | Rubri 1 | Rubri 2 | Rubri 3 | Rubri 4 | Rubri 5 | Total | Score on Grade Scale | Target >= 50% |
|-----------------------------|----------|---------------|---------|---------|---------|---------|---------|-------|----------------------|---------------|
| 1                           | 16106098 | RAMSUNDAR S   | 21      | 21      | 21      | 21      |         | 84    | 3                    | Y             |
| 2                           | 16106099 | RAMYA A       | 25      | 25      | 25      | 25      |         | 100   | 3                    | Y             |
| 3                           | 16106100 | RAMYA R       | 22      | 22      | 22      | 22      |         | 88    | 3                    | Y             |
| 4                           | 16106101 | RATEESH S     | 18      | 18      | 18      | 18      |         | 72    | 2                    | Y             |
| 5                           | 16106102 | RENUKA G      | 24      | 24      | 24      | 24      |         | 96    | 3                    | Y             |
| 6                           | 16106103 | ROSHINI       | 24      | 24      | 24      | 24      |         | 96    | 3                    | Y             |
| 7                           | 16106104 | RUPITHA S     | 22      | 22      | 22      | 22      |         | 88    | 3                    | Y             |
| 8                           | 16106105 | SABAREESH S   | 13      | 13      | 13      | 13      |         | 52    | 0                    | Y             |
| 9                           | 16106106 | SAMEEM M      | 22      | 22      | 22      | 22      |         | 88    | 3                    | Y             |
| 10                          | 16106144 | YUVAPRAKASH N | 23      | 23      | 23      | 23      |         | 92    | 3                    | Y             |
| Total Number of students    |          |               |         |         |         |         |         | 10    |                      |               |
| Number of students Attained |          |               |         |         |         |         |         | 10    |                      |               |
| Percentage of Attainment    |          |               |         |         |         |         |         | 100   |                      |               |

Faculty Signature

Suresh Kumar P

HOD

Dr.P.Rajeswari

DEAN

Dr.P.N Magudeswaran



## HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY

Valley Campus, Pollachi Highway, Coimbatore - 641032

### DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

#### Review 3

COURSE NAME & CODE : 16EC6801 Mini Project

SECTION : C

Name of the Faculty : Suresh Kumar P

Batch : 2016-2020

Total Strength : 10

Total Attended : 10

| S.No | REG.No.  | Name          | Rubri 1 | Rubri 2 | Rubri 3 | Rubri 4 | Rubri 5 | Total                       | Score on Grade Scale | Target >= 50% |
|------|----------|---------------|---------|---------|---------|---------|---------|-----------------------------|----------------------|---------------|
| 1    | 16106098 | RAMSUNDAR S   | 22      | 22      | 22      | 22      |         | 88                          | 3                    | Y             |
| 2    | 16106099 | RAMYA A       | 24      | 24      | 24      | 24      |         | 96                          | 3                    | Y             |
| 3    | 16106100 | RAMYA R       | 22      | 22      | 22      | 22      |         | 88                          | 3                    | Y             |
| 4    | 16106101 | RATEESH S     | 18      | 18      | 18      | 18      |         | 72                          | 2                    | Y             |
| 5    | 16106102 | RENUKA G      | 24      | 24      | 24      | 24      |         | 96                          | 3                    | Y             |
| 6    | 16106103 | ROSHINI       | 24      | 24      | 24      | 24      |         | 96                          | 3                    | Y             |
| 7    | 16106104 | RUPITHA S     | 23      | 23      | 23      | 23      |         | 92                          | 3                    | Y             |
| 8    | 16106105 | SABAREESH S   | 16      | 16      | 16      | 16      |         | 64                          | 1                    | Y             |
| 9    | 16106106 | SAMEEM M      | 23      | 23      | 23      | 23      |         | 92                          | 3                    | Y             |
| 10   | 16106144 | YUVAPRAKASH N | 23      | 23      | 23      | 23      |         | 92                          | 3                    | Y             |
|      |          |               |         |         |         |         |         | Total Number of students    | 10                   |               |
|      |          |               |         |         |         |         |         | Number of students Attained | 10                   |               |
|      |          |               |         |         |         |         |         | Percentage of Attainment    | 100                  |               |

Faculty Signature  
Suresh Kumar P

HOD  
Dr.P.Rajeswari

DEAN  
Dr.P.N Magudeswaran



## HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY

Valley Campus, Pollachi Highway, Coimbatore - 641032

### DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

#### Model MARKS

**Each Question Expected Level of Attainment - : 50%**

COURSE NAME & CODE : 16EC6801 Mini Project

SECTION : C

Batch : 2016-2020

Name of the Faculty : Suresh Kumar P

Total Strength : 10

| S.No                        | Univ Reg No | Name          | GRADE | Target $\geq$ : 50 % |
|-----------------------------|-------------|---------------|-------|----------------------|
| 1                           | 16106098    | RAMSUNDAR S   | B+    | Y                    |
| 2                           | 16106099    | RAMYA A       | O     | Y                    |
| 3                           | 16106100    | RAMYA R       | A+    | Y                    |
| 4                           | 16106101    | RATEESH S     | O     | Y                    |
| 5                           | 16106102    | RENUKA G      | O     | Y                    |
| 6                           | 16106103    | ROSHINI       | O     | Y                    |
| 7                           | 16106104    | RUPITHA S     | O     | Y                    |
| 8                           | 16106105    | SABAREESH S   | B     | Y                    |
| 9                           | 16106106    | SAMEEM M      | O     | Y                    |
| 10                          | 16106144    | YUVAPRAKASH N | O     | Y                    |
| Total Number of students    |             |               | 10    |                      |
| Number of students Attained |             |               | 10    |                      |
| Percentage of Attainment    |             |               | 100   |                      |
| University Attainment Level |             |               | 3     |                      |

Faculty Signature  
Suresh Kumar P

HOD  
Dr.P.Rajeswari



## HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY

Valley Campus, Pollachi Highway, Coimbatore - 641032

### DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

#### CO AND PO MAPPING

COURSE NAME & CODE : 16EC6801 Mini Project

Batch : 2016-2020

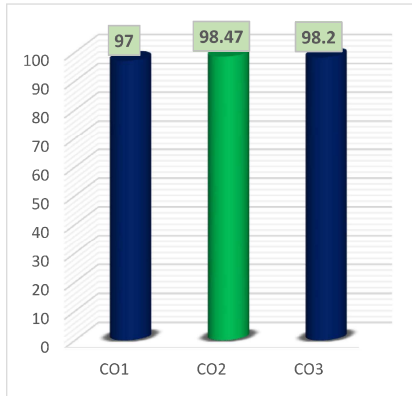
Name of the Faculty : Suresh Kumar P

SECTION : C

| CO Attainment |               |                |            |          |           |                   |    |
|---------------|---------------|----------------|------------|----------|-----------|-------------------|----|
| CO's          | Review (50 %) | END SEM (50 %) | DA (100 %) | DA (80%) | IDA (20%) | Attainment (100%) | AL |
| CO1           | 50.0          | 50.0           | 100.0      | 80.0     | 17.0      | 97.0              | 3  |
| CO2           | 50.0          | 50.0           | 100.0      | 80.0     | 18.5      | 98.5              | 3  |
| CO3           | 50.0          | 50.0           | 100.0      | 80.0     | 18.2      | 98.2              | 3  |

| CO-PO Mapping |     |     |     |     |     |     |     |     |     |      |      |      |      |      |  |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|--|
| CO's          | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |  |
| CO1           | 2   | 3   | 2   | 2   | 3   | 3   | 2   | 2   | 2   | 2    | 2    | 2    | 3    | 3    |  |
| CO2           | 3   | 2   | 2   | 2   | 3   | 3   | 2   | 2   | 2   | 2    | 2    | 2    | 3    | 3    |  |
| CO3           | 2   | 3   | 3   | 2   | 3   | 3   | 2   | 2   | 2   | 2    | 2    | 2    | 3    | 3    |  |

Graphical Representation - CO Attainment



| Scale       |                  |
|-------------|------------------|
| Weightage   | Attainment Level |
| >= 80 %     | 3                |
| >=70 & < 80 | 2                |
| >=60 & < 70 | 1                |

| PO Attainment |     |     |     |     |     |     |     |     |     |      |      |      |      |      |  |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|--|
| CO's          | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |  |
| CO1           | 2   | 3   | 2   | 2   | 3   | 3   | 2   | 2   | 2   | 2    | 2    | 2    | 3    | 3    |  |
| CO2           | 3   | 2   | 2   | 2   | 3   | 3   | 2   | 2   | 2   | 2    | 2    | 2    | 3    | 3    |  |
| CO3           | 2   | 3   | 3   | 2   | 3   | 3   | 2   | 2   | 2   | 2    | 2    | 2    | 3    | 3    |  |

2.3 2.7 2.3 2 3 3 2 2 2 2 2 2 3 3

\*DA - Direct Assessment

\*AL - Attainment Level

\*IDA - Indirect Assessment

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HOD  
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## HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY

Valley Campus, Pollachi Highway, Coimbatore - 641032

### DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

#### Consolidated Internal Mark

COURSE NAME & CODE : 16EC6801 Mini Project

Batch : 2016-2020

SECTION : C

Total Strength : 10

Name of the Faculty : Suresh Kumar P

| S.No | REG.No.  | Name          | Review I<br>20 Marks | Review II<br>40 Marks | Review III<br>40 Marks | Internal Marks |
|------|----------|---------------|----------------------|-----------------------|------------------------|----------------|
| 1    | 16106098 | RAMSUNDAR S   | 17.6                 | 33.6                  | 35.2                   | 86.4           |
| 2    | 16106099 | RAMYA A       | 19.2                 | 40                    | 38.4                   | 97.6           |
| 3    | 16106100 | RAMYA R       | 18.4                 | 35.2                  | 35.2                   | 88.8           |
| 4    | 16106101 | RATEESH S     | 14.4                 | 28.8                  | 28.8                   | 72             |
| 5    | 16106102 | RENUKA G      | 18.4                 | 38.4                  | 38.4                   | 95.2           |
| 6    | 16106103 | ROSHINI       | 19.2                 | 38.4                  | 38.4                   | 96             |
| 7    | 16106104 | RUPITHA S     | 17.6                 | 35.2                  | 36.8                   | 89.6           |
| 8    | 16106105 | SABAREESH S   | 12.8                 | 20.8                  | 25.6                   | 59.2           |
| 9    | 16106106 | SAMEEM M      | 18.4                 | 35.2                  | 36.8                   | 90.4           |
| 10   | 16106144 | YUVAPRAKASH N | 18.4                 | 36.8                  | 36.8                   | 92             |

Faculty Signature  
Suresh Kumar P

HOD  
Dr.P.Rajeswari

DEAN  
Dr.P.N Magudeswaran

*ANNEXURE VI*

| ENTRY MAPPING OF COs and POs:           |      |     |     |      |   |     |     |     |     |      |      |      |       |       |
|---|------|-----|-----|------|---|-----|-----|-----|-----|------|------|------|-------|-------|
| CO/PO                                   | PO1  | PO2 | PO3 | PO4  | PO5   | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO-1 | PSO-2 |
| CO1                                     | 2    | 3   | 1   | 1    | 1   | 1   | 1   | 1   | -   | -    | -    | -    | 1     | 1     |
| CO2                                     | 3    | 3   | 2   | 1    | 2   | -   | -   | -   | -   | -    | -    | -    | 2     | 2     |
| CO3                                     | 3    | 3   | 3   | 2    | -   | 3   | -   | 2   | 3   | -    | -    | -    | 3     | 3     |
| AVG                                     | 2.67 | 3   | 2   | 1.33 | 1.5   | 2   | 1   | 1.5 | 3   | -    | -    | -    | 2     | 2     |
| COURSE NAME & CODE                      |      |     |     |      | 16EC8901-Project Work                                   |     |     |     |     |      |      |      |       |       |
| SECTION                                 |      |     |     |      | C   |     |     |     |     |      |      |      |       |       |
| Name of the Faculty                     |      |     |     |      | Suresh Kumar P  |     |     |     |     |      |      |      |       |       |
| Department                              |      |     |     |      | DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING |     |     |     |     |      |      |      |       |       |
| Batch                                   |      |     |     |      | 2016-2020   |     |     |     |     |      |      |      |       |       |
| Question Expected Level of Attainment - |      |     |     |      | 60%   |     |     |     |     |      |      |      |       |       |
|   |      |     |     |      | No of students scores upto expected level               |     |     |     |     |      |      |      |       |       |
|   |      |     |     |      | % of scoring above the attainment level                 |     |     |     |     |      |      |      |       |       |

| Indirect Survey |           |      |      |              |
|-----------------|-----------|------|------|--------------|
| CO              | Excellent | Good | Poor | Percentage % |
| CO1             | 40        | 5    | 2    | 93.67        |
| CO2             | 42        | 3    | 2    | 95           |
| CO3             | 42        | 2    | 3    | 94.33        |
|                 |           |      |      |              |

1  
2  
3

Faculty Signature  
[Suresh Kumar P ]

HOD  
[ Dr.P.Rajeswari]

DEAN-ACADEMICS  
[Dr.P.N.Magudeswaran]

|                        |             |                | Total Strength 10 |         |         |         |         | Total Strength 10 |         |         |         |         | Total Strength 10 |             |         |         |         | 10         |         |             |          |
|------------------------|-------------|----------------|-------------------|---------|---------|---------|---------|-------------------|---------|---------|---------|---------|-------------------|-------------|---------|---------|---------|------------|---------|-------------|----------|
|                        |             |                | Total Attended 10 |         |         |         |         | Total Attended 10 |         |         |         |         | Total Attended 10 |             |         |         |         | 10         |         |             |          |
| INTERNAL TEST          |             |                | Review 1          |         |         |         |         | Review 2          |         |         |         |         | Review 3          |             |         |         |         | University |         |             |          |
| S.No                   | Univ Reg No | Name           | Rubri 1           | Rubri 2 | Rubri 3 | Rubri 4 | Rubri 5 | TOTAL SCORE       | Rubri 1 | Rubri 2 | Rubri 3 | Rubri 4 | Rubri 5           | TOTAL SCORE | Rubri 1 | Rubri 2 | Rubri 3 | Rubri 4    | Rubri 5 | TOTAL SCORE | ES Grade |
| Question Maximum Marks |             |                | 20                | 20      | 20      | 20      | 20      | 100               | 2       | 2       | 2       | 2       | 10                | 100         | 2       | 2       | 14      | 14         | 10      | 100         |          |
| 1                      | 16106098    | RAMSUNDAR S    | 17                | 17      | 17.5    | 17      | 17      | 85.5              | 16      | 16      | 15      | 16      | 16.5              | 79.5        | 19      | 18      | 18      | 19         | 18.5    | 92.5        | A+       |
| 2                      | 16106099    | RAMYA A        | 20                | 20      | 20      | 19.5    | 19      | 98.5              | 20      | 20      | 20      | 19.5    | 19                | 98.5        | 20      | 20      | 20      | 19.5       | 19      | 98.5        | O        |
| 3                      | 16106100    | RAMYA R        | 12                | 12      | 12      | 14      | 15      | 65                | 16      | 16      | 15      | 15      | 15                | 77          | 19      | 17      | 17      | 16         | 15      | 84          | A+       |
| 4                      | 16106101    | RATEESH S      | 16                | 16      | 17      | 18      | 17      | 84                | 17      | 17      | 18      | 19      | 18                | 89          | 19      | 18      | 18      | 19         | 17      | 91          | A+       |
| 5                      | 16106102    | RENUKA G       | 19                | 19      | 18      | 19      | 19      | 94                | 18      | 18      | 18      | 18      | 19                | 91          | 19      | 19      | 18      | 19         | 19      | 94          | O        |
| 6                      | 16106103    | ROSHINI GANESH | 19                | 19      | 18      | 18.5    | 19      | 93.5              | 18      | 18      | 18      | 18      | 19                | 91          | 19      | 19      | 19      | 19         | 19      | 95          | O        |
| 7                      | 16106104    | RUPITHA S      | 19                | 19      | 18      | 18      | 19      | 93                | 20      | 20      | 19      | 19      | 19                | 97          | 20      | 20      | 19      | 19         | 19      | 97          | O        |
| 8                      | 16106105    | SABAREESH S    | 15                | 15      | 16      | 17      | 16      | 79                | 14      | 14      | 14      | 14      | 17                | 73          | 15      | 15      | 16      | 17         | 17      | 80          | A        |
| 9                      | 16106106    | SAMEEM M       | 19                | 18      | 18      | 18      | 19      | 92                | 19      | 18      | 18      | 18      | 19                | 92          | 19      | 18      | 19      | 19         | 19      | 94          | O        |
| 10                     | 16106144    | YUVAPRAKASH N  | 18                | 18      | 18      | 18.5    | 18      | 90.5              | 18      | 18      | 18      | 18.5    | 18                | 90.5        | 19      | 18      | 18      | 19         | 18      | 92          | O        |



## HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY

Valley Campus, Pollachi Highway, Coimbatore - 641032

### DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

#### Review 1

COURSE NAME & CODE : 16EC8901-Project Work

SECTION : C

Name of the Faculty : Suresh Kumar P

Batch : 2016-2020

Total Strength : 10

Total Attended : 10

| S.No                        | REG.No.  | Name           | Rubri 1 | Rubri 2 | Rubri 3 | Rubri 4 | Rubri 5 | Total | Score on Grade Scale | Taget >= 60% |
|-----------------------------|----------|----------------|---------|---------|---------|---------|---------|-------|----------------------|--------------|
| 1                           | 16106098 | RAMSUNDAR S    | 17      | 17      | 17.5    | 17      | 17      | 85.5  | 3                    | Y            |
| 2                           | 16106099 | RAMYA A        | 20      | 20      | 20      | 19.5    | 19      | 98.5  | 3                    | Y            |
| 3                           | 16106100 | RAMYA R        | 12      | 12      | 12      | 14      | 15      | 65    | 1                    | Y            |
| 4                           | 16106101 | RATEESH S      | 16      | 16      | 17      | 18      | 17      | 84    | 3                    | Y            |
| 5                           | 16106102 | RENUKA G       | 19      | 19      | 18      | 19      | 19      | 94    | 3                    | Y            |
| 6                           | 16106103 | ROSHINI GANESH | 19      | 19      | 18      | 18.5    | 19      | 93.5  | 3                    | Y            |
| 7                           | 16106104 | RUPITHA S      | 19      | 19      | 18      | 18      | 19      | 93    | 3                    | Y            |
| 8                           | 16106105 | SABAREESH S    | 15      | 15      | 16      | 17      | 16      | 79    | 2                    | Y            |
| 9                           | 16106106 | SAMEEM M       | 19      | 18      | 18      | 18      | 19      | 92    | 3                    | Y            |
| 10                          | 16106144 | YUVAPRAKASH N  | 18      | 18      | 18      | 18.5    | 18      | 90.5  | 3                    | Y            |
| Total Number of students    |          |                |         |         |         |         |         |       | 10                   |              |
| Number of students Attained |          |                |         |         |         |         |         |       | 10                   |              |
| Percentage of Attainment    |          |                |         |         |         |         |         |       | 100                  |              |

Faculty Signature  
[Suresh Kumar P]

HOD  
[Dr.P.Rajeswari]

DEAN-ACADEMICS  
[Dr.P.N.Magudeswaran]



## HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY

Valley Campus, Pollachi Highway, Coimbatore - 641032

### DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

#### Review 2

COURSE NAME & CODE : 16EC8901-Project Work

SECTION : C

Name of the Faculty : Suresh Kumar P

Batch : 2016-2020

Total Strength : 10

Total Attended : 10

| S.No                        | REG.No.  | Name           | Rubri 1 | Rubri 2 | Rubri 3 | Rubri 4 | Rubri 5 | Total | Score on Grade Scale | Target >= 60% |
|-----------------------------|----------|----------------|---------|---------|---------|---------|---------|-------|----------------------|---------------|
| 1                           | 16106098 | RAMSUNDAR S    | 16      | 16      | 15      | 16      | 16.5    | 79.5  | 3                    | Y             |
| 2                           | 16106099 | RAMYA A        | 20      | 20      | 20      | 19.5    | 19      | 98.5  | 3                    | Y             |
| 3                           | 16106100 | RAMYA R        | 16      | 16      | 15      | 15      | 15      | 77    | 2                    | Y             |
| 4                           | 16106101 | RATEESH S      | 17      | 17      | 18      | 19      | 18      | 89    | 3                    | Y             |
| 5                           | 16106102 | RENUKA G       | 18      | 18      | 18      | 18      | 19      | 91    | 3                    | Y             |
| 6                           | 16106103 | ROSHINI GANESH | 18      | 18      | 18      | 18      | 19      | 91    | 3                    | Y             |
| 7                           | 16106104 | RUPITHA S      | 20      | 20      | 19      | 19      | 19      | 97    | 3                    | Y             |
| 8                           | 16106105 | SABAREESH S    | 14      | 14      | 14      | 14      | 17      | 73    | 2                    | Y             |
| 9                           | 16106106 | SAMEEM M       | 19      | 18      | 18      | 18      | 19      | 92    | 3                    | Y             |
| 10                          | 16106144 | YUVAPRAKASH N  | 18      | 18      | 18      | 18.5    | 18      | 90.5  | 3                    | Y             |
| Total Number of students    |          |                |         |         |         |         |         |       | 10                   |               |
| Number of students Attained |          |                |         |         |         |         |         |       | 10                   |               |
| Percentage of Attainment    |          |                |         |         |         |         |         |       | 100                  |               |

Faculty Signature  
[Suresh Kumar P]

HOD  
[Dr.P.Rajeswari]

DEAN-ACADEMICS  
[Dr.P.N.Magudeswaran]



## HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY

Valley Campus, Pollachi Highway, Coimbatore - 641032

### DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

#### Review 3

COURSE NAME & CODE : 16EC8901-Project Work

SECTION : C

Name of the Faculty : Suresh Kumar P

Batch : 2016-2020

Total Strength : 10


Total Attended : 10

| S.No                        | REG.No.  | Name           | Rubri 1 | Rubri 2 | Rubri 3 | Rubri 4 | Rubri 5 | Total | Score on Grade Scale | Taget >= 60% |
|-----------------------------|----------|----------------|---------|---------|---------|---------|---------|-------|----------------------|--------------|
| 1                           | 16106098 | RAMSUNDAR S    | 19      | 18      | 18      | 19      | 18.5    | 92.5  | 3                    | Y            |
| 2                           | 16106099 | RAMYA A        | 20      | 20      | 20      | 19.5    | 19      | 98.5  | 3                    | Y            |
| 3                           | 16106100 | RAMYA R        | 19      | 17      | 17      | 16      | 15      | 84    | 3                    | Y            |
| 4                           | 16106101 | RATEESH S      | 19      | 18      | 18      | 19      | 17      | 91    | 3                    | Y            |
| 5                           | 16106102 | RENUKA G       | 19      | 19      | 18      | 19      | 19      | 94    | 3                    | Y            |
| 6                           | 16106103 | ROSHINI GANESH | 19      | 19      | 19      | 19      | 19      | 95    | 3                    | Y            |
| 7                           | 16106104 | RUPITHA S      | 20      | 20      | 19      | 19      | 19      | 97    | 3                    | Y            |
| 8                           | 16106105 | SABAREESH S    | 15      | 15      | 16      | 17      | 17      | 80    | 3                    | Y            |
| 9                           | 16106106 | SAMEEM M       | 19      | 18      | 19      | 19      | 19      | 94    | 3                    | Y            |
| 10                          | 16106144 | YUVAPRAKASH N  | 19      | 18      | 18      | 19      | 18      | 92    | 3                    | Y            |
| Total Number of students    |          |                |         |         |         |         |         |       | 10                   |              |
| Number of students Attained |          |                |         |         |         |         |         |       | 10                   |              |
| Percentage of Attainment    |          |                |         |         |         |         |         |       | 100                  |              |

Faculty Signature  
[Suresh Kumar P]

HOD  
[Dr.P.Rajeswari]

DEAN-ACADEMICS  
[Dr.P.N.Magudeswaran]

|  <b>HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY</b><br>Valley Campus, Pollachi Highway, Coimbatore - 641032<br><b>DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING</b><br><b>Model MARKS</b><br><b>Each Question Expected Level of Attainment - : 60%</b> |             |                |                     |                      |
|--|-------------|----------------|---------------------|----------------------|
| COURSE NAME & CODE : 16EC8901-Project Work   |             |                | Batch : 2016-2020   |                      |
| SECTION : C  |             |                | Total Strength : 10 |                      |
| Name of the Faculty : Suresh Kumar P   |             |                |                     |                      |
| S.No   | Univ Reg No | Name           | GRADE               | Target $\geq$ : 60 % |
| 1  | 16106098    | RAMSUNDAR S    | A+                  | Y                    |
| 2  | 16106099    | RAMYA A        | O                   | Y                    |
| 3  | 16106100    | RAMYA R        | A+                  | Y                    |
| 4  | 16106101    | RATEESH S      | A+                  | Y                    |
| 5  | 16106102    | RENUKA G       | O                   | Y                    |
| 6  | 16106103    | ROSHINI GANESH | O                   | Y                    |
| 7  | 16106104    | RUPITHA S      | O                   | Y                    |
| 8  | 16106105    | SABAREESH S    | A                   | Y                    |
| 9  | 16106106    | SAMEEM M       | O                   | Y                    |
| 10   | 16106144    | YUVAPRAKASH N  | O                   | Y                    |
| Total Number of students   |             |                | 10                  |                      |
| Number of students Attained  |             |                | 10                  |                      |
| Percentage of Attainment   |             |                | 100                 |                      |
| University Attainment Level  |             |                | 3                   |                      |

Faculty Signature  
[Suresh Kumar P ]

HOD  
[ Dr.P.Rajeswari ]



## HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY

Valley Campus, Pollachi Highway, Coimbatore - 641032

### DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

#### CO AND PO MAPPING

COURSE NAME & CODE : 16EC8901-Project Work

Batch : 2016-2020

Name of the Faculty : Suresh Kumar P

SECTION : C

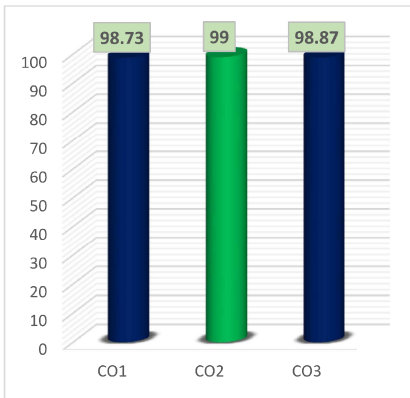
#### CO Attainment

| CO's | Review (100 %) | END SEM (100 %) | DA (200 %) | DA (80%) | IDA (20%) | Attainment (100%) | AL |
|------|----------------|-----------------|------------|----------|-----------|-------------------|----|
| CO1  | 100.0          | 100.0           | 200.0      | 80.0     | 18.7      | 98.7              | 3  |
| CO2  | 100.0          | 100.0           | 200.0      | 80.0     | 19.0      | 99.0              | 3  |
| CO3  | 100.0          | 100.0           | 200.0      | 80.0     | 18.9      | 98.9              | 3  |

#### CO-PO Mapping

| CO's | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1  | 2   | 3   | 1   | 1   | 1   | 1   | 1   | 1   | -   | -    | -    | -    | 1    | 1    |
| CO2  | 3   | 3   | 2   | 1   | 2   | -   | -   | -   | -   | -    | -    | -    | 2    | 2    |
| CO3  | 3   | 3   | 3   | 2   | -   | 3   | -   | 2   | 3   | -    | -    | -    | 3    | 3    |

#### Graphical Representation - CO Attainment



| Scale       |                  |
|-------------|------------------|
| Weightage   | Attainment Level |
| >= 80 %     | 3                |
| >=70 & < 80 | 2                |
| >=60 & < 70 | 1                |

#### PO Attainment

| CO's | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO1  | 2   | 3   | 1   | 1   | 1   | 1   | 1   | 1   | -   | -    | -    | -    | 1    | 1    |
| CO2  | 3   | 3   | 2   | 1   | 2   | -   | -   | -   | -   | -    | -    | -    | 2    | 2    |
| CO3  | 3   | 3   | 3   | 2   | -   | 3   | -   | 2   | 3   | -    | -    | -    | 3    | 3    |

2.67    3    2    1.33    1.5    2    1    1.5    3    -    -    -    2    2

Faculty Signature  
[Suresh Kumar P]

HOD  
[ Dr.P.Rajeswari]



## HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY

Valley Campus, Pollachi Highway, Coimbatore - 641032

### DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

#### Consolidated Internal Mark

COURSE NAME & CODE : 16EC8901-Project Work

Batch : 2016-2020

SECTION : C

Total Strength : 10

Name of the Faculty : Suresh Kumar P

| S.No | REG.No.  | Name           | Review I<br>20 Marks | Review II<br>40 Marks | Review III<br>40 Marks | Internal Marks |
|------|----------|----------------|----------------------|-----------------------|------------------------|----------------|
| 1    | 16106098 | RAMSUNDAR S    | 17.1                 | 31.8                  | 37                     | 85.9           |
| 2    | 16106099 | RAMYA A        | 19.7                 | 39.4                  | 39.4                   | 98.5           |
| 3    | 16106100 | RAMYA R        | 13                   | 30.8                  | 33.6                   | 77.4           |
| 4    | 16106101 | RATEESH S      | 16.8                 | 35.6                  | 36.4                   | 88.8           |
| 5    | 16106102 | RENUKA G       | 18.8                 | 36.4                  | 37.6                   | 92.8           |
| 6    | 16106103 | ROSHINI GANESH | 18.7                 | 36.4                  | 38                     | 93.1           |
| 7    | 16106104 | RUPITHA S      | 18.6                 | 38.8                  | 38.8                   | 96.2           |
| 8    | 16106105 | SABAREESH S    | 15.8                 | 29.2                  | 32                     | 77             |
| 9    | 16106106 | SAMEEM M       | 18.4                 | 36.8                  | 37.6                   | 92.8           |
| 10   | 16106144 | YUVAPRAKASH N  | 18.1                 | 36.2                  | 36.8                   | 91.1           |

Faculty Signature  
[Suresh Kumar P]

HOD  
[ Dr.P.Rajeswari]

DEAN-ACADEMICS  
[Dr.P.N.Magudeswaran]

*ANNEXURE VII*

| ENTRY MAPPING OF COs and POs: |     |     |     |     |     |     |     |     |     |      |      |      |       |       |
|-------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|-------|-------|
| CO/PO                         | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO-1 | PSO-2 |
| CO1                           | 1   | 3   | 1   | 1   | 1   | 1   | 1   | 1   | -   | -    | -    | -    | 1     | 1     |

| Indirect Survey |           |      |      |              |
|-----------------|-----------|------|------|--------------|
| CO              | Excellent | Good | Poor | Percentage % |
| CO1             | 37        | 5    | 3    | 92           |

1  
2  
3

|   |   |
|---|---|
| COURSE NAME & CODE                      | Technical Seminar                         |
| SECTION                                 | B   |
| Name of the Faculty                     | Dr.Geetha.P                               |
| Department                              | ECE                                       |
| Batch                                   | 2016 - 2020                               |
| Question Expected Level of Attainment - | 50%                                       |
|   | No of students scores upto expected level |
|   | % of scoring above the attainment level   |

Faculty Signature  
[Dr.Geetha.P ]

HOD  
[ Dr.P.Rajeswari]

DEAN-ACADEMICS  
[Dr.P.N.Magudeswaran]

|                        |             | Total Strength 10 |            |             |             |             | Total Strength 10 |                        |             |             |             | Total Strength 10 |                |                        |             |             | 10          |                |                |                        |             |
|------------------------|-------------|-------------------|------------|-------------|-------------|-------------|-------------------|------------------------|-------------|-------------|-------------|-------------------|----------------|------------------------|-------------|-------------|-------------|----------------|----------------|------------------------|-------------|
|                        |             | Total Attended 10 |            |             |             |             | Total Attended 10 |                        |             |             |             | Total Attended 10 |                |                        |             |             | 10          |                |                |                        |             |
| INTERNAL TEST          |             |                   | Review 1   |             |             |             |                   | Review 2               |             |             |             |                   | Review 3       |                        |             |             |             | Unive<br>rsity |                |                        |             |
| S.No                   | Univ Reg No | Name              | Rubri<br>1 | Rubr<br>i 2 | Rubr<br>i 3 | Rubr<br>i 4 | Ru<br>bri<br>5    | TOT<br>AL<br>SCO<br>RE | Rubr<br>i 1 | Rubr<br>i 2 | Rubr<br>i 3 | Rubr<br>i 4       | Ru<br>bri<br>5 | TOT<br>AL<br>SCO<br>RE | Rubr<br>i 1 | Rubr<br>i 2 | Rubr<br>i 3 | Rubr<br>i 4    | Ru<br>bri<br>5 | TOT<br>AL<br>SCO<br>RE | ES<br>Grade |
| Question Maximum Marks |             |                   | 20         | 20          | 20          | 20          | 20                | 100                    | 2           | 2           | 2           | 2                 | 10             | 100                    | 2           | 2           | 14          | 14             | 10             | 100                    |             |
| 1                      | 16106049    | JOYWIN T          | 20         | 20          | 20          | 26          | 86                | 20                     | 20          | 20          | 26          |                   | 86             | 20                     | 20          | 20          | 26          |                | 86             | O                      |             |
| 2                      | 16106050    | KANIMOZHIV        | 20         | 20          | 20          | 16          | 76                | 20                     | 20          | 20          | 16          |                   | 76             | 20                     | 20          | 20          | 16          |                | 76             | A                      |             |
| 3                      | 16106051    | KARUPPAIAH. S     | 20         | 20          | 20          | 16          | 76                | 20                     | 20          | 20          | 16          |                   | 76             | 20                     | 20          | 20          | 16          |                | 76             | O                      |             |
| 4                      | 16106054    | LALITHA T         | 20         | 20          | 20          | 15          | 75                | 20                     | 20          | 20          | 15          |                   | 75             | 20                     | 20          | 20          | 15          |                | 75             | A+                     |             |
| 5                      | 16106055    | LAVANYA M.S       | 20         | 20          | 20          | 15          | 75                | 20                     | 20          | 20          | 15          |                   | 75             | 20                     | 20          | 20          | 15          |                | 75             | A+                     |             |
| 6                      | 16106056    | LINGATHARAN A     | 20         | 20          | 20          | 13          | 73                | 20                     | 20          | 20          | 13          |                   | 73             | 20                     | 20          | 20          | 13          |                | 73             | A                      |             |
| 7                      | 16106057    | LOSINLR           | 20         | 20          | 20          | 13          | 73                | 20                     | 20          | 20          | 13          |                   | 73             | 20                     | 20          | 20          | 13          |                | 73             | A                      |             |
| 8                      | 16106058    | MADHUMITHA V      | 20         | 20          | 20          | 16          | 76                | 20                     | 20          | 20          | 16          |                   | 76             | 20                     | 20          | 20          | 16          |                | 76             | A                      |             |
| 9                      | 16106059    | MADHU MOHAN M     | 25         | 25          | 20          | 21          | 91                | 25                     | 25          | 20          | 21          |                   | 91             | 25                     | 25          | 20          | 21          |                | 91             | O                      |             |
| 10                     | 16106097    | RAJESHKUMAR R     | 25         | 24          | 23          | 23          | 95                | 25                     | 24          | 23          | 23          |                   | 95             | 25                     | 24          | 23          | 23          |                | 95             | A+                     |             |



## HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY

Valley Campus, Pollachi Highway, Coimbatore - 641032

ECE

Review 1

COURSE NAME & CODE : Technical Seminar

SECTION : B

Name of the Faculty : Dr.Geetha.P

Batch : 2016 - 2020

Total Strength : 10

Total Attended : 10

| S.No                        | REG.No.  | Name          | Rubri 1 | Rubri 2 | Rubri 3 | Rubri 4 | Rubri 5 | Total | Score on Grade Scale | Taget >= 50% |
|-----------------------------|----------|---------------|---------|---------|---------|---------|---------|-------|----------------------|--------------|
| 1                           | 16106049 | JOYWIN T      | 20      | 20      | 20      | 26      |         | 86    | 3                    | Y            |
| 2                           | 16106050 | KANIMOZHLV    | 20      | 20      | 20      | 16      |         | 76    | 2                    | Y            |
| 3                           | 16106051 | KARUPPAIAH. S | 20      | 20      | 20      | 16      |         | 76    | 2                    | Y            |
| 4                           | 16106054 | LALITHA T     | 20      | 20      | 20      | 15      |         | 75    | 2                    | Y            |
| 5                           | 16106055 | LAVANYA M.S   | 20      | 20      | 20      | 15      |         | 75    | 2                    | Y            |
| 6                           | 16106056 | LINGATHARAN A | 20      | 20      | 20      | 13      |         | 73    | 2                    | Y            |
| 7                           | 16106057 | LOSINI.R      | 20      | 20      | 20      | 13      |         | 73    | 2                    | Y            |
| 8                           | 16106058 | MADHUMITHA V  | 20      | 20      | 20      | 16      |         | 76    | 2                    | Y            |
| 9                           | 16106059 | MADHU MOHAN M | 25      | 25      | 20      | 21      |         | 91    | 3                    | Y            |
| 10                          | 16106097 | RAJESHKUMAR R | 25      | 24      | 23      | 23      |         | 95    | 3                    | Y            |
| Total Number of students    |          |               |         |         |         |         |         |       | 10                   |              |
| Number of students Attained |          |               |         |         |         |         |         |       | 10                   |              |
| Percentage of Attainment    |          |               |         |         |         |         |         |       | 100                  |              |

Faculty Signature  
[Dr.Geetha.P ]

HOD  
[ Dr.P.Rajeswari]

DEAN-ACADEMICS  
[Dr.P.N.Magudeswaran]



## HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY

Valley Campus, Pollachi Highway, Coimbatore - 641032

ECE  
Review 2

COURSE NAME & CODE : Technical Seminar

SECTION : B

Name of the Faculty : Dr.Geetha.P

Batch : 2016 - 2020

Total Strength : 10

Total Attended : 10

| S.No                        | REG.No.  | Name          | Rubri 1 | Rubri 2 | Rubri 3 | Rubri 4 | Rubri 5 | Total | Score on Grade Scale | Taget >= 50% |
|-----------------------------|----------|---------------|---------|---------|---------|---------|---------|-------|----------------------|--------------|
| 1                           | 16106049 | JOYWIN T      | 20      | 20      | 20      | 26      |         | 86    | 3                    | Y            |
| 2                           | 16106050 | KANIMOZHIV    | 20      | 20      | 20      | 16      |         | 76    | 2                    | Y            |
| 3                           | 16106051 | KARUPPAIAH. S | 20      | 20      | 20      | 16      |         | 76    | 2                    | Y            |
| 4                           | 16106054 | LALITHA T     | 20      | 20      | 20      | 15      |         | 75    | 2                    | Y            |
| 5                           | 16106055 | LAVANYA M.S   | 20      | 20      | 20      | 15      |         | 75    | 2                    | Y            |
| 6                           | 16106056 | LINGATHARAN A | 20      | 20      | 20      | 13      |         | 73    | 2                    | Y            |
| 7                           | 16106057 | LOSINI.R      | 20      | 20      | 20      | 13      |         | 73    | 2                    | Y            |
| 8                           | 16106058 | MADHUMITHA V  | 20      | 20      | 20      | 16      |         | 76    | 2                    | Y            |
| 9                           | 16106059 | MADHU MOHAN M | 25      | 25      | 20      | 21      |         | 91    | 3                    | Y            |
| 10                          | 16106097 | RAJESHKUMAR R | 25      | 24      | 23      | 23      |         | 95    | 3                    | Y            |
| Total Number of students    |          |               |         |         |         |         |         |       | 10                   |              |
| Number of students Attained |          |               |         |         |         |         |         |       | 10                   |              |
| Percentage of Attainment    |          |               |         |         |         |         |         |       | 100                  |              |

Faculty Signature  
[Dr.Geetha.P ]

HOD  
[ Dr.P.Rajeswari]

DEAN-ACADEMICS  
[Dr.P.N.Magudeswaran]



## HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY

Valley Campus, Pollachi Highway, Coimbatore - 641032

ECE  
Review 3

COURSE NAME & CODE : Technical Seminar

SECTION : B

Name of the Faculty : Dr.Geetha.P

Batch : 2016 - 2020

Total Strength : 10


Total Attended : 10

| S.No                        | REG.No.  | Name          | Rubri 1 | Rubri 2 | Rubri 3 | Rubri 4 | Rubri 5 | Total | Score on Grade Scale | Taget >= 50% |
|-----------------------------|----------|---------------|---------|---------|---------|---------|---------|-------|----------------------|--------------|
| 1                           | 16106049 | JOYWIN T      | 20      | 20      | 20      | 26      |         | 86    | 3                    | Y            |
| 2                           | 16106050 | KANIMOZHIV    | 20      | 20      | 20      | 16      |         | 76    | 2                    | Y            |
| 3                           | 16106051 | KARUPPAIAH. S | 20      | 20      | 20      | 16      |         | 76    | 2                    | Y            |
| 4                           | 16106054 | LALITHA T     | 20      | 20      | 20      | 15      |         | 75    | 2                    | Y            |
| 5                           | 16106055 | LAVANYA M.S   | 20      | 20      | 20      | 15      |         | 75    | 2                    | Y            |
| 6                           | 16106056 | LINGATHARAN A | 20      | 20      | 20      | 13      |         | 73    | 2                    | Y            |
| 7                           | 16106057 | LOSINI.R      | 20      | 20      | 20      | 13      |         | 73    | 2                    | Y            |
| 8                           | 16106058 | MADHUMITHA V  | 20      | 20      | 20      | 16      |         | 76    | 2                    | Y            |
| 9                           | 16106059 | MADHU MOHAN M | 25      | 25      | 20      | 21      |         | 91    | 3                    | Y            |
| 10                          | 16106097 | RAJESHKUMAR R | 25      | 24      | 23      | 23      |         | 95    | 3                    | Y            |
| Total Number of students    |          |               |         |         |         |         |         |       | 10                   |              |
| Number of students Attained |          |               |         |         |         |         |         |       | 10                   |              |
| Percentage of Attainment    |          |               |         |         |         |         |         |       | 100                  |              |

Faculty Signature  
[Dr.Geetha.P ]

HOD  
[ Dr.P.Rajeswari]

DEAN-ACADEMICS  
[Dr.P.N.Magudeswaran]

|  <b>HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY</b><br>Valley Campus, Pollachi Highway, Coimbatore - 641032<br><b>ECE</b><br><b>Model MARKS</b><br><b>Each Question Expected Level of Attainment - : 50%</b> |             |               |                     |                      |
|--|-------------|---------------|---------------------|----------------------|
| COURSE NAME & CODE : Technical Seminar   |             |               | Batch : 2016 - 2020 |                      |
| SECTION : B  |             |               | Total Strength : 10 |                      |
| Name of the Faculty : Dr.Geetha.P  |             |               |                     |                      |
| S.No   | Univ Reg No | Name          | GRADE               | Target $\geq$ : 50 % |
| 1  | 16106049    | JOYWIN T      | O                   | Y                    |
| 2  | 16106050    | KANIMOZHI.V   | A                   | Y                    |
| 3  | 16106051    | KARUPPAIAH. S | O                   | Y                    |
| 4  | 16106054    | LALITHA T     | A+                  | Y                    |
| 5  | 16106055    | LAVANYA M.S   | A+                  | Y                    |
| 6  | 16106056    | LINGATHARAN A | A                   | Y                    |
| 7  | 16106057    | LOSIN.R       | A                   | Y                    |
| 8  | 16106058    | MADHUMITHA V  | A                   | Y                    |
| 9  | 16106059    | MADHU MOHAN M | O                   | Y                    |
| 10   | 16106097    | RAJESHKUMAR R | A+                  | Y                    |
| Total Number of students   |             |               | 10                  |                      |
| Number of students Attained  |             |               | 10                  |                      |
| Percentage of Attainment   |             |               | 100                 |                      |
| University Attainment Level  |             |               | 3                   |                      |

Faculty Signature  
[Dr.Geetha.P ]

HOD  
[ Dr.P.Rajeswari]



## HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY

Valley Campus, Pollachi Highway, Coimbatore - 641032

ECE

### CO AND PO MAPPING

COURSE NAME & CODE : Technical Seminar

Batch : 2016 - 2020

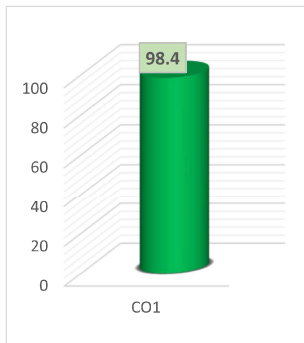
Name of the Faculty : Dr.Geetha.P

SECTION : B

| CO Attainment |               |                |            |          |           |                   |    |
|---------------|---------------|----------------|------------|----------|-----------|-------------------|----|
| CO's          | Review (50 %) | END SEM (50 %) | DA (100 %) | DA (80%) | IDA (20%) | Attainment (100%) | AL |
| CO1           | 50.0          | 50.0           | 100.0      | 80.0     | 18.4      | 98.4              | 3  |

| CO-PO Mapping |     |     |     |     |     |     |     |     |     |      |      |      |      |      |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO's          | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
| CO1           | 1   | 3   | 1   | 1   | 1   | 1   | 1   | 1   | -   | -    | -    | -    | 1    | 1    |

Graphical Representation - CO Attainment



| Scale       |                  |
|-------------|------------------|
| Weightage   | Attainment Level |
| >= 80 %     | 3                |
| >=70 & < 80 | 2                |
| >=60 & < 70 | 1                |

| PO Attainment |     |     |     |     |     |     |     |     |     |      |      |      |      |      |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| CO's          | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
| CO1           | 1   | 3   | 1   | 1   | 1   | 1   | 1   | 1   | -   | -    | -    | -    | 1    | 1    |

\*DA - Direct Assessment

\*AL - Attainment Level

\*IDA - Indirect Assessment

Faculty Signature  
[Dr.Geetha.P ]

HOD  
[ Dr.P.Rajeswari]

*ANNEXURE VIII*



**Hindusthan College of Engineering And Technology**  
 (An Autonomous Institution, Affiliated to Anna University, Chennai)  
 Valley Campus, Pollachi Highway,  
 Coimbatore – 641 032.



Note :

- 1 Prepare your course exit survey according to the course outcome mentioned in the CIS.
- 2 The highlighted portion (CO1-CO5) and Specific learning Outcomes(Q6-Q10) has to be changed according to your course outcome

**COURSE EXIT SURVEY**  
**(for Course Outcome Assessment)**

**ASSESSMENT OF LEARNING OUTCOMES FOR SUBJECT –**

|                                    |   |
|------------------------------------|---|
| <b>PROGRAMME</b> : ECE             | <b>DEGREE</b> : BE  |
| <b>COURSE</b> : SIGNALS AND SYSTEM | <b>SEMESTER</b> : VIII <b>CREDITS</b> : 3   |
| <b>COURSE CODE</b> : 16EC3202      | <b>COURSE TYPE</b> : CORE / <del>ELECTIVE</del> / <del>BREADTH</del> / S&H  |
| <b>REGULATION</b> : 2008           | <b>YEAR</b> : <input type="checkbox"/> I <input type="checkbox"/> II <input type="checkbox"/> III <input type="checkbox"/> IV |
| <b>FACULTY</b> : Dr.P.RAJESWARI    | <b>DATE</b> :   |

**LEARNING OUTCOMES FOR DIGITAL COMMUNICATION**

Students will be able to

1. To understand the basic signals and their properties.
2. To learn the mathematical tool of Fourier series and transforms.
3. To understand the concept of system analysis using Laplace transforms.
4. To understand the discrete signal analysis using transforms.
5. To know discrete systems analysis using Z-transform

PLEASE EVALUATE ON THE FOLLOWING SCALE

|             |         |            |
|-------------|---------|------------|
| EXCELENT(E) | GOOD(G) | AVERAGE(A) |
| 3           | 2       | 1          |

| S.NO                      | QUESTIONNAIRE  | E<br>3                   | G<br>2                   | S<br>1                   |
|---------------------------|--|--------------------------|--------------------------|--------------------------|
| <b>GENERAL OBJECTIVES</b> |  |                          |                          |                          |
| 1.                        | Has the course achieved its stated objectives?                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2.                        | Have you gained the stated skills?                             | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3.                        | Whether the syllabus is adequate to achieve the objectives?    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4.                        | Whether the faculty has helped in acquiring the stated skills? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

|                                   |   |                              |                             |                          |
|-----------------------------------|---|------------------------------|-----------------------------|--------------------------|
| <b>5.</b>                         | Whether the teacher has given real life application of the course?                      | <input type="checkbox"/>     | <input type="checkbox"/>    | <input type="checkbox"/> |
| <b>SPECIFIC LEARNING OUTCOMES</b> |   |                              |                             |                          |
| <b>6.</b>                         | Are you able To understand the basic signals and their properties ?                     | <input type="checkbox"/>     | <input type="checkbox"/>    | <input type="checkbox"/> |
| <b>7.</b>                         | Can you apply the Fourier series and transforms for signal Analysis ?                   | <input type="checkbox"/>     | <input type="checkbox"/>    | <input type="checkbox"/> |
| <b>8.</b>                         | Have you understood the concept of system analysis applying Laplace transform?          | <input type="checkbox"/>     | <input type="checkbox"/>    | <input type="checkbox"/> |
| <b>9.</b>                         | Whether, are you able to apply Fourier transform concept for Discrete signal analysis ? | <input type="checkbox"/>     | <input type="checkbox"/>    | <input type="checkbox"/> |
| <b>10.</b>                        | Can you apply Z-transform for Discrete system response analysis?                        | <input type="checkbox"/>     | <input type="checkbox"/>    | <input type="checkbox"/> |
| <b>SATISFICATION LEVEL</b>        |   |                              |                             |                          |
| <b>11.</b>                        | Are you satisfied with the outcomes achieved through this course?                       | <input type="checkbox"/> YES | <input type="checkbox"/> NO |                          |
| <b>12.</b>                        | Is your answer is No, please indicate your preference :                                 |                              |                             |                          |
| <b>13.</b>                        | a) More inputs. additional contents, real life examples                                 | <input type="checkbox"/> YES | <input type="checkbox"/> NO |                          |
| <b>14.</b>                        | b) More experienced ,capable faculty  | <input type="checkbox"/> YES | <input type="checkbox"/> NO |                          |

*ANNEXURE IX*



**Hindusthan College of Engineering And Technology**  
 (An Autonomous Institution, Affiliated to Anna University, Chennai)  
 Valley Campus, Pollachi Highway  
 Coimbatore – 641 032



**GRADUATE EXIT SURVEY**  
**(for Program Outcome Assessment)**

Name of the student :  
 Class :  
 Batch :

Please rate yourself and tick the box that corresponds to your level of agreement:

|    |   |                                       |                                  |  |
|----|---|---------------------------------------|----------------------------------|--|
| 1. | Ability to apply the knowledge of engineering fundamentals to solve complex engineering problems.   | Excellent<br><input type="checkbox"/> | Good<br><input type="checkbox"/> | Satisfactory<br><input type="checkbox"/> |
| 2. | Capacity to identify and analyze complex engineering problems.  | Excellent<br><input type="checkbox"/> | Good<br><input type="checkbox"/> | Satisfactory<br><input type="checkbox"/> |
| 3. | Ability to design solutions for complex engineering problems for the public.  | Excellent<br><input type="checkbox"/> | Good<br><input type="checkbox"/> | Satisfactory<br><input type="checkbox"/> |
| 4. | Equipped to use research-based knowledge and methods to provide valid conclusions.  | Excellent<br><input type="checkbox"/> | Good<br><input type="checkbox"/> | Satisfactory<br><input type="checkbox"/> |
| 5. | Capability to apply appropriate techniques, resources and modern engineering tools to complex engineering activities.                                   | Excellent<br><input type="checkbox"/> | Good<br><input type="checkbox"/> | Satisfactory<br><input type="checkbox"/> |
| 6. | Ability to apply engineering knowledge to assess societal, health, safety, legal and cultural issues relevant to the professional engineering practice. | Excellent<br><input type="checkbox"/> | Good<br><input type="checkbox"/> | Satisfactory<br><input type="checkbox"/> |

|     |  |                                       |                                  |  |
|-----|--|---------------------------------------|----------------------------------|--|
| 7.  | Capacity to understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development | Excellent<br><input type="checkbox"/> | Good<br><input type="checkbox"/> | Satisfactory<br><input type="checkbox"/> |
| 8.  | Ability to apply ethical principles and norms in the engineering practice.   | Excellent<br><input type="checkbox"/> | Good<br><input type="checkbox"/> | Satisfactory<br><input type="checkbox"/> |
| 9.  | Capacity to function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.  | Excellent<br><input type="checkbox"/> | Good<br><input type="checkbox"/> | Satisfactory<br><input type="checkbox"/> |
| 10. | Ability to communicate effectively on complex engineering activities.  | Excellent<br><input type="checkbox"/> | Good<br><input type="checkbox"/> | Satisfactory<br><input type="checkbox"/> |
| 11. | Ability to demonstrate and apply knowledge of engineering and management principles to manage projects in multidisciplinary environments.  | Excellent<br><input type="checkbox"/> | Good<br><input type="checkbox"/> | Satisfactory<br><input type="checkbox"/> |
| 12. | Ability to undergo life-long learning in the broadest context to technological change.   | Excellent<br><input type="checkbox"/> | Good<br><input type="checkbox"/> | Satisfactory<br><input type="checkbox"/> |
| 13. | Ability to disseminate the knowledge in Electronics and Communication Engineering towards Technical Incubation   | Excellent<br><input type="checkbox"/> | Good<br><input type="checkbox"/> | Satisfactory<br><input type="checkbox"/> |
| 14. | Have the perseverance to learn the modern design tools for electronic system design and analysis.  | Excellent<br><input type="checkbox"/> | Good<br><input type="checkbox"/> | Satisfactory<br><input type="checkbox"/> |

Any other suggestions for further improvement:

**Signature:**

**Date:**

*ANNEXURE X*



**Hindusthan College of Engineering And Technology**  
 (An Autonomous Institution, Affiliated to Anna University, Chennai)  
 Valley Campus, Pollachi Highway,  
 Coimbatore – 641 032.



**ALUMINI FEEDBACK FORM**  
**(for Program Outcome Assesment)**

Name of the student :  
 Class :  
 Batch :

Please rate yourself and tick the box that corresponds to your level of agreement:

|    |  |                                       |                                  |  |
|----|--|---------------------------------------|----------------------------------|--|
| 1. | Able to apply the knowledge of engineering fundamentals to the solve complex engineering problems.   | Excellent<br><input type="checkbox"/> | Good<br><input type="checkbox"/> | Satisfactory<br><input type="checkbox"/> |
| 2. | Capacity to identify and analyze complex engineering problems.   | Excellent<br><input type="checkbox"/> | Good<br><input type="checkbox"/> | Satisfactory<br><input type="checkbox"/> |
| 3. | Able to design solutions for complex engineering problems for the public.  | Excellent<br><input type="checkbox"/> | Good<br><input type="checkbox"/> | Satisfactory<br><input type="checkbox"/> |
| 4. | Equipped to use research – base knowledge and methods to provide valid conclusions.  | Excellent<br><input type="checkbox"/> | Good<br><input type="checkbox"/> | Satisfactory<br><input type="checkbox"/> |
| 5. | Capable of applying appropriate techniques, resources and modern engineering tools to complex engineering activities .                               | Excellent<br><input type="checkbox"/> | Good<br><input type="checkbox"/> | Satisfactory<br><input type="checkbox"/> |
| 6. | Able to apply engineering knowledge to assess societal, health, safety, legal and cultural issues relevant to the professional engineering practice. | Excellent<br><input type="checkbox"/> | Good<br><input type="checkbox"/> | Satisfactory<br><input type="checkbox"/> |

|     |  |                                       |                                  |  |
|-----|--|---------------------------------------|----------------------------------|--|
| 7.  | Capacity to understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development | Excellent<br><input type="checkbox"/> | Good<br><input type="checkbox"/> | Satisfactory<br><input type="checkbox"/> |
| 8.  | Able to apply ethical principles and norms in the engineering practice.  | Excellent<br><input type="checkbox"/> | Good<br><input type="checkbox"/> | Satisfactory<br><input type="checkbox"/> |
| 9.  | Capacity to function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.  | Excellent<br><input type="checkbox"/> | Good<br><input type="checkbox"/> | Satisfactory<br><input type="checkbox"/> |
| 10. | Able to communicate effectively on complex engineering activities .  | Excellent<br><input type="checkbox"/> | Good<br><input type="checkbox"/> | Satisfactory<br><input type="checkbox"/> |
| 11. | Able to demonstrate and apply knowledge of engineering and management principles to manage projects in multidisciplinary environments.   | Excellent<br><input type="checkbox"/> | Good<br><input type="checkbox"/> | Satisfactory<br><input type="checkbox"/> |
| 12. | Equipped with the ability to engage in life-long learning in the broadest context to technological change.   | Excellent<br><input type="checkbox"/> | Good<br><input type="checkbox"/> | Satisfactory<br><input type="checkbox"/> |
| 13. | Able to disseminate the knowledge in Electronics and Communication Engineering towards Technical Incubation  | Excellent<br><input type="checkbox"/> | Good<br><input type="checkbox"/> | Satisfactory<br><input type="checkbox"/> |
| 14. | Have the perseverance to learn the modern design tools for electronic system design and analysis.  | Excellent<br><input type="checkbox"/> | Good<br><input type="checkbox"/> | Satisfactory<br><input type="checkbox"/> |
| 15. | Able to exhibit the technical skills and knowledge in the working environment, higher studies and research   | Excellent<br><input type="checkbox"/> | Good<br><input type="checkbox"/> | Satisfactory<br><input type="checkbox"/> |
| 16. | Able to succeed in multidisciplinary dimensions by excelling through life-long learning.   | Excellent<br><input type="checkbox"/> | Good<br><input type="checkbox"/> | Satisfactory<br><input type="checkbox"/> |

|     |   |  |                                  |  |
|-----|---|--|----------------------------------|--|
| 17. | Capacity to become leaders and innovators by devising engineering solutions for social issues and problems. |  | Good<br><input type="checkbox"/> | Satisfactory<br><input type="checkbox"/> |
|-----|---|--|----------------------------------|--|

Any other suggestions for further improvement:

**Signature:**

**Date:**

*ANNEXURE XI*



|    |   |                                       |                                  |  |
|----|---|---------------------------------------|----------------------------------|--|
|    | leadership qualities.   |                                       |                                  |  |
| 6. | Does the graduate follow ethical values in his working environment?     | Excellent<br><input type="checkbox"/> | Good<br><input type="checkbox"/> | Satisfactory<br><input type="checkbox"/> |
| 7. | Does the graduate exhibit his innovation and creativity in his work?    | Excellent<br><input type="checkbox"/> | Good<br><input type="checkbox"/> | Satisfactory<br><input type="checkbox"/> |
| 8. | Rate the optimistic attitude of our graduate towards the society.       | Excellent<br><input type="checkbox"/> | Good<br><input type="checkbox"/> | Satisfactory<br><input type="checkbox"/> |
| 9. | Is the graduate from HICET completing the scheduled assignment on time? | Often<br><input type="checkbox"/>     | Rare<br><input type="checkbox"/> | Never<br><input type="checkbox"/>        |
| 10 | Does the graduate abide by the rules and regulations of the industry?   | Often<br><input type="checkbox"/>     | Rare<br><input type="checkbox"/> | Never<br><input type="checkbox"/>        |

Please provide any suggestions for further improvement:

**Signature:**

**Date:**

*ANNEXURE XII*



**Hindusthan College of Engineering And Technology**  
 (An Autonomous Institution, Affiliated to Anna University, Chennai)  
 Valley Campus, Pollachi Highway,  
 Coimbatore – 641 032.



**PARENTS FEEDBACK FORM**  
**(for Program Outcome Assesment)**

1) Name & Occupation of Parents :

a) Father: \_\_\_\_\_ Occupation: \_\_\_\_\_

b) Mother: \_\_\_\_\_ Occupation: \_\_\_\_\_

Address: \_\_\_\_\_

Name of Student/ Ward: \_\_\_\_\_

Course / Class: \_\_\_\_\_

Please tick the box that corresponds to your level of agreement:

|    |  |                                       |                                      |  |
|----|--|---------------------------------------|--------------------------------------|--|
| 1. | Are you satisfied with the academic performance of your ward at HICET?       | High<br><input type="checkbox"/>      | Moderate<br><input type="checkbox"/> | Low<br><input type="checkbox"/>          |
| 2. | Do you think that the knowledge level of your ward is improved?              | High<br><input type="checkbox"/>      | Moderate<br><input type="checkbox"/> | Low<br><input type="checkbox"/>          |
| 3. | Did your ward achieve your expectation level in his career?                  | High<br><input type="checkbox"/>      | Moderate<br><input type="checkbox"/> | Low<br><input type="checkbox"/>          |
| 4. | Are you satisfied with the employment status of your ward?                   | High<br><input type="checkbox"/>      | Moderate<br><input type="checkbox"/> | Low<br><input type="checkbox"/>          |
| 5. | Is your ward practicing moral values?  | Often<br><input type="checkbox"/>     | Rare<br><input type="checkbox"/>     | Never<br><input type="checkbox"/>        |
| 6. | Is your ward's leadership quality enhanced?                                  | High<br><input type="checkbox"/>      | Moderate<br><input type="checkbox"/> | Low<br><input type="checkbox"/>          |
| 7. | What do you feel about the social behavior of your ward after joining HICET? | Excellent<br><input type="checkbox"/> | Good<br><input type="checkbox"/>     | Satisfactory<br><input type="checkbox"/> |

Any other suggestions to share:

**Signature:**

**Date:**