

21ES614 Project (Deadline – 5 April 2024, 05.00 pm) – 40 marks – CO1, CO2, CO3 & CO4

Components	Marks	Guidelines/Remarks
Project	40	
IoT solution for Real world application	7.5	Topic – 2.5, Component Selection – 2.5, Demonstration – 2.5
IoT nodes	7.5	End (min 2) / Edge (min 1) nodes – 2.5 marks each
Server/Cloud with UI & database	7.5	UI – 2.5, Database – 2.5, Edge/Fog/Cloud Computing – 2.5
IoT Technologies	7.5	IoT Concepts – 2.5, Tools/frameworks – 2.5, Comprehension – 2.5
Report	10	Format – 3, Content – 7

Guidelines on Work

1. An end-to-end solution for a real-world automation problem having the following,
 - a. IoT solution for real-world problem
 - i. Topic - Justice and compliance to the topic.
 - ii. Component selection - Justification for component selection.
 - iii. Demonstration - Operational results for selected automation problem.
 - b. IoT nodes (Minimum three nodes)
 - i. End (minimum two)/Edge (minimum one) nodes.
 - ii. End nodes – Sensor/Actuator (or both) with μ C and communication device.
 - iii. Edge node – Interconnecting two networks – protocol conversion, edge computing, aggregation, averaging, etc.
 - c. Server/Cloud facility with
 - i. UI (Mobile/Web application),
 - ii. Computing (processing and decision making), and,
 - iii. Database (data storage – structured or unstructured).
 - d. Demonstration of IoT technologies
 - i. Concepts - Communication models (publish-subscribe, request-response, etc.), network, node, etc.
 - ii. Tools/framework - Cloud/Rapid prototyping/Development, etc.
 - iii. Comprehension – Node, Network and Application concepts. Alternate options/Scaling in terms of size and features.
2. Select the topic and components (& tools) based on thorough literature review.
3. Ensure you can explain the IoT concepts and demonstrate properly.
4. Even if you are demonstrating a scaled down system the logic for the real-world problem solution must be clear.
5. Ensure the nodes/server/cloud requirements.

Guidelines on Format & Content of Report

1. Separate the content into necessary chapters (Introduction, literature review (essential), objectives, system overview, methodology, tools & systems, nodes, network, results & analysis and conclusion with proper titles and sections wherever required).
2. Number and provide caption for all tables and figures, if any (Include relevant tables and figures as needed).
3. Any abbreviation used must be expanded in full at the first instance of use with abbreviation in brackets.
4. References must be listed at the end following IEEE reference styling.
5. Cite references wherever necessary.
6. Use the template given for lab manual.

General Guidelines

- **Do not access/view/modify the project report or work of other students.**
- If found copied, project report and work will not be evaluated, zero marks will be awarded and will refer the issue to Chairperson EEE and Exam department for further disciplinary actions.
- The topic on which the project is submitted must be approved with the concerned course handling faculty.

Mode of Submission for all files related to project & lab

1. Report must be one single '.pdf'/' .docx' file.
2. The file must be named EBS240**.pdf/.docx (Replace ** by last two digits of your roll number).
3. **Lab code files:** Code files with proper file extension (like .c, .py, .php, .apk, .xlsx, .csv etc.) can be included in one folder and named EBS240**_Lab_Code (Replace ** by last two digits of student roll numbers).
4. **Project Code files:** Code files with proper file extension (like .c, .py, .php, .apk, .xlsx, .csv etc.) can be included in one folder and named Batch**_Project_Code_X_Y_Z (Replace ** by your batch number, X, Y and Z by last two digits of student roll numbers).
5. The file must be uploaded in the respective project submission folder in drive link shared for this course.