

**Expected Outcome:** Students are expected to write and publish a Research paper (Literature survey on any selected topic). File a patent or copyright.

**RESEARCH AND CONTENT DEVELOPMENT LABORATORY**

<b>S. No</b>	<b>Week</b>	<b>Description</b>
1	1	Introduction to Research Methodology, Documentation and Content Development
2	2	Topic selection, Research Formulation and Design for writing working paper by students
3	3	Data Collection and Sampling Design exercises for writing working paper by students
4	4	Data Collection and Sampling Design exercises for writing working paper by students
5	5	Abstract Writing by using LATEX software
6	6	Writing a Working Paper using LATEX software (Introduction)
7	7	Writing a Working Paper using LATEX software (Literature Survey with References)
8	8	Report Submission and Seminar of Working Paper (till Literature Survey only)
9	9	Writing a Working Paper using LATEX software (Research Methodology)
10	10	Writing a Working Paper using LATEX software (Research Methodology)
11	11	Writing a Working Paper using LATEX software (Results and Discussion)
12	12	Writing a Working Paper using LATEX software (Results and Discussion)
13	13	Writing Working Paper using LATEX software (Conclusion)
14	14	Proof reading exercises on Working Paper
15	15	Plagiarism Analysis and Paraphrasing Exercises on Working Paper
16	16	Report Submission and Seminar on Full Length Working Paper

**Evaluation Criteria:**

1. Internal Evaluation
  - a. Day to Day Lab Evaluation **(20 Marks)**
  - b. Internal Examination **(10 Marks)**
  
2. External Evaluation:
  - a. Appropriateness of topic **(5 marks)**
  - b. Writing Skills of Working Paper **(25 Marks)**
  - c. Content Development **(40 Marks)**

## **Rubric of External Evaluation on Working Paper:**

### **1. Appropriateness of topic (5 Marks maximum)**

- Inadequate (0 Marks): Technical topic is not in field of Engineering and technology, and is unlikely to be of interest to consumers.
- Acceptable (3 Marks): Topic is either not in field of Engineering and technology, or is unlikely to be of interest to consumers.
- High Quality (5 Marks): Technical topic is in field of Engineering and technology, and is likely to be of interest to consumers.

### **2. Writing Skill of Working Paper (25 Marks maximum)**

#### ***a. Organization (10 Marks)***

- Inadequate (0 Marks): There appeared to be no organization of the article's contents.
- Needs improvement (3 Marks): Organization of the topic is difficult to follow, due to inadequate transitions and/or rambling format.
- Acceptable (7 Marks): The article can be easily followed. Basic transitions are used and a structured format is followed.
- High quality (10 Marks): The main points in the article can be easily followed. Effective transitions are used and a structured format is followed.

#### ***b. Communication style (10 Marks)***

- Inadequate (0 Marks): The article is difficult to follow due to excessive scientific jargon. The technical material is vague and ambiguous.
- Needs improvement (3 Marks): Some scientific jargon is used. Technical material is somewhat confusing.
- Acceptable (7 Marks): Minimal scientific jargon. Technical material is mostly understandable. A creative element introduced to persuade reader.
- High quality (10 Marks): The article is written in a creative style without the use of scientific jargon. The importance of the topic is clearly conveyed to the lay reader. The technical material is explained in understandable and concise language.

#### ***c. Mechanics and grammar (5 Marks)***

- Inadequate (0 Marks): Sentences and paragraphs are difficult to read and understand due to poor grammar or mechanics.
- Needs improvement (2 Marks): The article contains numerous grammatical and mechanical errors.
- Acceptable (3 Marks): The article contains minimal grammatical and mechanical errors.
- High quality (5 Marks): The article contains no grammatical or mechanical errors.

### **3. Content Development (40 Marks maximum)**

#### ***a. Correctness of facts (20 Marks)***

- Inadequate (5 Marks): Many "facts" are erroneous, misinterpreted, or misleading.
- Needs improvement (10 Marks): Some technical details and "facts" are incorrect.
- Acceptable (15 Marks): Technical details and "facts" are generally correct.
- High quality (20 Marks): All facts appear to be correct.

***b. Completeness ( 20 Mark)***

- Inadequate (5 Marks): The article did not address some of the important points mentioned in the references the author selected. No reference citation.
- Needs improvement (10 Marks): Addressed some of the important points, but provided few details. Reference included but citations are incomplete.
- Acceptable (15 Marks): Addressed the main points, but left out some important details. Mostly complete reference citations.
- High quality (20 Marks): Addressed all the important points completely. Complete reference citation using prescribed format.