Course Code	Course Name	Credits
MEL703	**Industrial Skills**	**01**

Course Rationale: This course has been designed to prepare final year mechanical engineering students for placements, as well as to build computer skills and advanced soft skillsto make them ready for a career in the industry.

Objectives:

1. To familiarise mechanical engineering students with basiccomputer/IT skillsin the industry.
2. To practise soft skills and communication to be industry-ready.
3. To inculcate critical thinking and problem-solving abilities for efficient team and project outcomes.
4. To be prepared for campus placements by practising aptitude, logical reasoning, Group discussion and personal interview rounds.

Outcomes: At the end of the course, **the learners will be able to**

1. Skilfully prepare and edit documents and slides on MS Word and MS PowerPoint etc.
2. Execute functions on MS Excel.
3. Learn how to navigate tasks and execute functions in G-suite.
4. Understand and practice metacognitive skillsof creativity and problem solving.
5. Hone team building and leadership skills.

Perform well in campus placement rounds by practising Aptitude, Logical reasoning, Group Discussion and Personal Interviews.

Module	**List of Experiments and Activities**	**No. of La sessions (*2hrs)**
1	**Computer/IT skills**	6
1.1	Basics of Computers- Desktop/Laptop operations	
1.2	Microsoft Office	
1.2.1	• **MS Word**- Assignment to Create and use various commands in a Word document (Page setup, text formatting, templates, SmartArt, Title and Ribbon bar, Editing etc.)	
1.2.2	• **MS Excel**- Assignment to Create and tabulate a spreadsheet (Excel- data analysis, charts, pivot tables, VBA, etc.)	
1.2.3	• **MS- Power point**- Assignment to design and use a Presentation Software(MSPPT, Prezi, etc. – Presentation	

1.2.4 1.3 1.4	design, templates, custom slides, animation, graphs, charts, troubleshooting etc.) • **MS Outlook** (Navigation, archiving, tasks distribution, filters, scheduling etc.) • G-Suite (Gmail, G-Meet, Calendar, Sheets, Docs, Slides etc.) • An introduction to the typesetting package LATEX.	
2	**Aptitude and Logical Reasoning**	2
2.1 2.2	Aptitude – Aptitude training, types of questions, mock tests Logical Reasoning – Verbal and Non-verbal reasoning, Types of questions, Mock tests	
3	**Developing Metacognitive skills**	2
3.1 3.2	Task orientation and Goal setting (can be based on Final year Project): Creativity and Problem-solving	
4	**Collaborative Techniques:Team building skills**	1
4.1 4.2	Activities on Team building Case studies on Leadership, Decision making and Team building	
5	**GD – PI**	2
5.1 5.2	Group Discussion – Factual, Strategic, Abstract, Case study, Picture based Personal Interview–Types of Interview Questions, Strategies, Sample answers, Mock Interviews	

Assignments: Assignments and activities should enable a steady progress in developing the aforementioned skills.A record of the conducted activities can be attached in journal as image printouts, and write up of case studies.

1. Application of MS Office skills (Individual)
   - Create and edit Word documents
   - Create and execute MS Excel functions
   - Create and enhance MS PPT
2. Writing a simple document in LATEX editor and running the typesetter program to produce finished document
3. Aptitude and Logical reasoning tests/practice sheets

4. Team building skills: Activities/Tasks to be performed as a team of 3 or 4 students.
5. Group Discussions

Case studies on problem-solving to be done as a team activity.

Personal Interview questionslog book

Assessment: Total – 50 Marks

Marks distribution will be as follows:

FINAL TERM WORK – 25 Marks

Assignments (Journal) – 20 Marks

Attendance - 05 Marks

ORALS/Written – 25 Marks

1. **Aptitude Test (Written) - 15 Marks**
2. **Mock Interview (Orals) – 10 Marks**

Books recommended/References/ Resources:

1. Meenakshi Raman, Prakash Singh. *Business Communication*, Oxford University Press, 2012
2. Claudyne Wilder. *The Presentations Kit*: 10 steps for Selling Your Ideas, John Wiley & Sons, 1994.
3. Lesikar, Flatley. *Basic Business Communication*: Skills for Empowering the Internet Generation, Tata McGraw Hill, 2008.
4. Flavell, J. H. *Cognitive development*: Past, present, and future. 1992.
5. Thorpe, Edgar and Showick Thorpe. *Objective English*, Pearson, 2013. (7thedition Amazon)
6. Thorpe, Edgar. *Test of Reasoning*: for All Competitive Examination. 7th edition., Amazon
7. Sinha, Nishit K., *Reasoning*, Pearson.
8. Aggarwal, R.S., *A Modern Approach to Logical Reasoning*, S. Chand.
9. Weblinks - https://cambridge-community.org.uk/professional-development/gswmeta/index.html
10. Various Quantitative aptitude books and websites listhttps://eduly.in/best-quantitative-aptitude-books/
    https://prepinsta.com/learn-aptitude/
    https://www.simplilearn.com/learn-ms-excel-free-training-course-skillup

NPTEL

Creativityhttps://nptel.ac.in/courses/109101017

Course Era

MS Excelhttps://www.coursera.org/projects/introduction-microsoft-excel
G-suite https://www.coursera.org/projects/collaborating-g-suite-apps
Problem solving https://www.coursera.org/learn/problem-solving

Udemy

G-suite https://www.udemy.com/course/learn-gsuite/