ME 206 Manufacturing Processes I
Spring 2022
Term Paper and Course Project

Due to the online semester, it is difficult to have fully experimental project so we will have two modules for the project:

1. **Term Paper and a Presentation Due before Midsem. A one-page abstract is due by Feb 7 (Exact dates for presentation and full-term paper will be announced later)**
2. **As far as possible some original modeling, analysis or experiments for post Midsem (Since a lot of you are on campus, we may be able to facilitate experimental projects)**

PRE-MIDSEM GOAL:

Format of Term Paper:
Include the following sections in your report:

- Introduction
- Process modeling and/or analysis (if available) by previous researchers
- Experimental studies reported
- Open issues for further investigation
- Problem statement and objectives for Module 2
- Proposed methodology for accomplishing the objectives and conclusions
- References

Resources:
Please cite every paper or internet resource you use for this paper. A good way to start is first select a topic and then do a keyword search in database:

- scholar.google.com
- Scopus.com
- Sciencedirect.com
- ASME Digital Collection
- Engineering Village (Available with IITB library in databases https://www.library.iitb.ac.in/e-resources/databases/)

  These databases will list the relevant papers. Every figure and table not generated by you has to be cited.

Groups and Project list:
The project is to be performed in self-selected groups of **five or less.** If you have any issues in forming groups, please contact me with a copy to Mr. Sachin Alya and we will match you up.

The project list and the TAs are listed in the Annexure. I request the CR to float a google sheet so that the students can select a topic of their choice

The overall length should be no more than 5 pages (including illustrations but not including the Cover Page and references). Every report will be checked for plagiarism. Please do not copy even a single sentence. Write everything in your own words.

Annexure 1: Proposed List of Projects

S. No.	Project Title	Resource person	Email
1	Modeling of laser additive manufacturing	Prakhar	prakharjain@iitb.ac.in
2	Effect of 3-D surface roughness on functional performance	Sachin Alya	SachinAlya <alyasachin@gmail.com>
3	Experimental studies on repair with laser additive manufacturing	Shobhit Agrawal	17D100011@iitb.ac.in
4	CFD modeling of particle flow in nozzle for additive manufacturing	Sachin Alya	Sachin Alya <alyasachin@gmail.com>
5	Analysis of laser surface hardening	Vishnu Narayanan	vishnu Narayanan <vishnu92ns@gmail.com>
6	Experimental study of laser cleaning	Almigdad	almigdad@iitb.ac.in
7	Study of short pulse laser heating of metals	Vishnu Narayanan	vishnu Narayanan <vishnu92ns@gmail.com>
8	Investigations on laser microdrilling	Arvind Kumar Gupta	194106016@iitb.ac.in
9	Laser drilling of composites	Arvind Kumar Gupta	194106016@iitb.ac.in
10	Analytical and FE modeling of clsoed die forging	Prakhar	prakharjain@iitb.ac.in
11	Image processing for mould damage detection	Sandesh Birla	sandeshbirla@iitb.ac.in
12	Analytical and Finite Element modeling of Rolling Process	Prakhar	prakharjain@iitb.ac.in
13	System integration and control of precision CNC stage	Suraj Kumar	surajkumar973596@gmail.com
14	Design of docking stations for different processing heads in robotic repair	Sachin Alya	sachin Alya <alyasachin@gmail.com>
15	Any other project of mutual interest	Ramesh Singh	rsingh@iitb.ac.in