

Guidelines for the Qualifying Examination for PhD Candidates
Department of Mechanical Engineering, IIT Bombay
(Applicable for students admitted in July 2022 onwards i.e
Autumn 2022-23)

Qualifying Examination:

This is a Department-mandated written examination, which has to be passed by the candidate for continuing in the PhD program, in addition to the mandatory credits requirements from the Institute.

Philosophy behind the Qualifying Examination:

At the time of PhD admission, as the applicants come with different academic backgrounds from different places, it is not possible to completely judge their potential for doing a PhD. This disparity is eliminated in the qualifying examination, as they will get the opportunity to study the required subjects here. The examination will also ensure that there is a minimum common level of technical competency for all PhDs graduating from our department.

Who will evaluate:

A set of qualifying examination committees, appointed by the DPGC, will administer and evaluate the various papers.

Scope:

The qualifying examination will consist of two papers:

1. Applied Mathematics (AM) will be common to candidates from all the three groups.
2. 1 in a core subject (CC) from the student's prospective specialization.

For example, for a student from TFE, the two subjects can be AM and any one of: Fluid mechanics (TFE1) OR Heat Transfer (TFE2). Student is allowed to change the core subject (for e.g. FM/HT for TFE) after one attempt, but it will be his/her last attempt to clear the core subject. The contents of the CC papers will be based on the syllabus provided for each of these papers (available on the Department website; follow the links PhD Academics--- PhD Qualifiers).

Timelines:

Each candidate will get at the most two attempts to clear both the papers. Candidates with ME/MTech as the previous degrees must clear all papers (including both attempts, if required) within one year of their joining the program. Candidates with BE/BTech as the previous degrees must clear all papers (including both attempts, if required) within one-and-a-half years of their joining the program. A candidate need not appear for both the papers in a single attempt. However, as mentioned above, all papers must be cleared within the stipulated deadline to be eligible for continuing in the PhD program. The examinations will be offered twice a year: around January and around July. The ME Office will announce the exact dates, sufficiently in advance.

Evaluation and Results:

- The grading of the papers will be done anonymously. The names of the candidates will not be revealed to the examiners.
 - Each paper will be graded on a pass/fail basis. The candidate will be deemed to have passed the qualifying examination if he/she passes all papers. The minimum marks needed to pass each paper are set to 40% of the total marks for that paper, and this will be clearly mentioned on the question paper.
 - Evaluated answer books will be shown to the candidates, along with a detailed solution with associated marking scheme. If the candidate feels that he/she is eligible for more marks, the candidate will be asked to provide a written application with detailed justification for his/her claim. This written application, along with his/her answer book, will be handed over to the concerned paper committee for their response. This process will be permitted only ONCE and the decision of the paper committee to award marks after this process will be considered to be final, with no more iterations.
 - In case the candidate fails to clear the examination within the stipulated deadline, the candidate will be required to discontinue from the PhD program with no obligation from the Department.
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Design Engineering	Paper 1	Paper 2
	AM	DES1 / DES2

Thermal and Fluids Engineering	Paper 1	Paper 2
	AM	TFE1 / TFE2

Manufacturing Engineering	Paper 1	Paper 2
	AM	MFG1 / MFG2

Subjects

Abbreviation	Name
AM	Applied Mathematics
DES1	Solid Mechanics
DES2	Kinematics and Dynamics
TFE1	Fluid Mechanics
TFE2	Heat Transfer
MFG1	Manufacturing Processes-1
MFG2	Manufacturing Processes-2