Approved in 44th BoA Meeting (24-11-2021)

Course number : EE 642
Course Name : Research Study
Credit Distribution :0-0-6-3
Intended for : M.Tech (VLSI) -
Prerequisite : Nil
Mutual Exclusion : Nill

Preamble: Research study course is brought into the realms of M.Tech (VLSI) programme to enable a student pursue a research topic of interest under the supervision of a faculty member hereinafter referred to as advisor for the research study. Research Study is designed to provide credit for field research, survey of literature leading to problem identification and extended knowledge in a focused field of study. The topic can be from academic or industrial research fields in the domain of VLSI.

Objectives (based action verbs at appropriate levels of Bloom's Taxonomy):

1. *Understand* in details a particular area of research through contemporary publications in that area.
2. *Analyze* the flow of research in a particular direction.
3. *Identify* the gap in that area.
4. *Formulate* a problem to identify that gap.
5. *Propose* an initial solution for the problem formulated.

Methodology guidelines:

1. A student enrolled in M.Tech (VLSI) programme has to register for 3 credits of research studies during winter break after 1st semester. The credits earned through the research study will be added to the credits earned during the 2nd semester.
2. A student may be given the option to choose the broad area of Research Study (academic or industrial research), viz. Device Physics, Fabrication Technology, Circuit Design or Systems, based on which advisor(s) may be allotted to the student.
3. The topic chosen by student has to be approved by the faculty advisor.
4. The role of the advisor(s) is to assist the student during the research study.
5. It is expected that the student will meet the advisor at least once in a week.
6. The report of the research study has to be submitted in the form of a Term Paper at the end of the winter break.
7. The course will culminate with a seminar being presented at the end of winter break.
8. The seminar will be evaluated by a committee of four members involving faculty advisor (or nominee), advisor for the research study, two experts in that area from the faculty members of IIT Mandi.
9. The seminar is supposed to test presentation skills, clarity of problem, quality of slides being prepared and question-answer session at the end of seminar.

10. The seminar can be an open seminar, although the decision of the four member committee will be final.
11. The student is expected to put in an effort of 30 hours per week for two and half months from start of winter break to its end.
12. In events of a dispute between the student and advisor, the matter has to be settled in consultation with faculty advisor which in exceptional cases may go to course coordinator, Chairperson (SCEE) or Dean (Academics).
13. The advisor reserves the right to reject a student with sufficient reasons if a student fails to deliver up to the expectations of the advisor. In such a case, a student will have to find out his advisor on his own. However, the student will not be given any extra time to work out the new research study.
14. Any intellectual property (IP) generated out of an independent study is subjected to the IP regulations of IIT Mandi regarding sharing and ownership of IP rights.