

Topic: Program Testing

Faculty Name: Prof. Rajib Mall, IIT Kharagpur

Department: Computer Science

Relevant Semester: 3rd year

Relevant Course : Software Engineering

Pre-Requisite : Experience in C programming and object-oriented programming using languages such as C++ or Java. Knowledge of software requirements specification is preferable.

Course Description & Outline :

- The module will address testing a program at the levels of unit, integration, and system. For unit testing, both black-box and white-box techniques shall be discussed with the help of example test case design problems. For black box testing, besides equivalence partitioning and boundary value analysis, cause-effect graphing and combinatorial testing shall be discussed.
- For white-box testing, besides coverage-based testing techniques, Mutation testing shall be discussed.
- For system testing, both functional and performance testing techniques shall be discussed. Testing techniques for object-oriented programs shall be included. Automated testing will be covered and a few open source testing tools would be included in the discussions and participants would be encouraged to use these tools.