PIS221	Information Security Design Project (4 Self Effort Hours)	L-1 :T-0 : P-4 Cr-5

Course description: Information Security Design Project is a graduate level course generally consisting of a team-based semesterlong project and emphasizes on both technical and managerial skills. Information Security is a practice-oriented and applied discipline and hence there is an emphasis on hands-on development, process, usage of Security tools in addition to theory and basic concepts. Students will be involved in examining, analyzing and reporting different kinds of vulnerabilities present in specific target domains. This will include making use of existing frameworks and also integrating and modifying them to develop Intrusion Detection Systems, Malware Analysis Systems or Ethical Vulnerability Exploitation Systems for example.

Course objectives:

- Application of advanced programming techniques in project
- Encourage group working and project planning
- Introduce the principles of software systems design including user interface design
- Analyse the design and optimise it with respect to requirements
- Introduce the requirements of project documentation
- Technical report writing.

Course Outcomes: Upon completion of this project, students will (be able to):

- Possess knowledge of different security attacks on a system and their detection methods.
- Possess knowledge of security tools and their working
- Design and develop custom specific vulnerability detectors, exploiters and mitigators
- Automate grouping/annotation of low-level events, e.g. access-time, log-file entry, to higher-level events, e.g. program start, login
- Apply the engineering process of problem solving
- Awareness of design methodologies & its implementation
- Demonstrate organised and concise report writing skills

Teaching strategies: The instructors will deliver lectures as well as demonstrate practicals in the laboratory. The student as individuals and as groups will also have to undertake extensive independent research and development work on the project.

Assessment: The performance and learning of the students on individual basis as well as group work will be monitored regularly by the instructors. The assessment will be based on this interim performance (40%) and final assessment, by a panel of examiners, where students will have to present a final demonstration (40%) and report (10%), which will further be accompanied by an oral assessment (10%).