# COURSE DESCRIPTION

*Course Name:* Communication and Signal Processing Systems Design
*Course Number:* EE535P
*Credits:* 0-0-4-2 (L-T-P-C)
*Prerequisites:* None
*Intended for:* M.Tech. Communications and Signal Processing (CSP)
*Distribution:* Core for M.Tech. (CSP)
*Semester:* Winter Session of Year I

**Preamble:** The objective of this course is to provide hands-on experience in system design to the M.Tech. (CSP) students after completion of their first-semester course work. This course will not only help them in understanding the practical application of various core and elective courses, but also will prepare them for specializations they may plan to pursue.

The students are expected to deliver a product---**a hardware prototype**, a **well-designed software**, **a high-level design of a complex system** or, **a tested and verified software**---at the end of the course. To ensure the engagement of each and every student, the projects are supposed to be done individually. Students are encouraged to pursue the same or similar projects as their dissertations.

**Course modules:** It is advisable that the projects should be related to the courses M.Tech.(CSP) students may credit or the specializations that this program offers. Therefore, students can opt for any project in Signal Processing, Communications or Machine Learning. Additionally, they are allowed to select a project from other areas, e.g., VLSI, Power electronics, Electrical drives or Control systems, as long as the project has **30% or more overlap** with any of the three specialization of M.Tech. (CSP) curriculum.

**Deliverables:** A student must declare the deliverables of her/his project in the initial project proposal after consulting with the respective mentor(s). While the initial project proposal and the final report carry some marks, a significant portion of the marks, **70% or more**, is allotted to the deliverables to emphasize their importance**.**

**Contact hours:** On average, a student should work 40 hours per week on her/his project. The students are supposed to meet their respective mentors at least once in a week to report their progress.

**Evaluation:** There will be two evaluations—one in the beginning of the winter vacation and the other one in the beginning of the forthcoming even semester. In the first evaluation, the students will be graded based on the initial project proposals they have submitted. During the second evaluation, they will be evaluated based on their progress with respect to the promised deliverables, their project reports and the understanding they have gained from their respective projects.

**Textbooks: Related literature.**

**Similarity Content Declaration with Existing Courses: NA**

**Justification for new course proposal if cumulative similarity content is > 30%: N.A.**