PANDIT DEENDAYAL PETROLEUM UNIVERSITY, GANDHINAGAR
SCHOOL OF TECHNOLOGY

COURSE STRUCTURE FOR B TECH IN COMPUTER ENGINEERING													
Semester VIII			**B Tech in Computer Engineering**										
Sr. No.	**Course/Lab Code**	**Course/Lab Name**	**Teaching Scheme**					**Examination Scheme**					
								Theory			**Practical**		**Total**
			L	**T**	**P**	**C**	**Hrs/ Wk**	**CE**	**MS**	**ES**	**CE**	**ES**	**Marks**
1	19CP411P	Comprehensive Project	0	0	38	19	38	-	-	-	There will be three reviews (30, 30, 40 marks)		100
		Total	0	0	38	19	38	-	-	-			100

CE- Continuous Evaluation, MS-Mid Semester; ES – End Semester Exam
Comprehensive Project can be performed either in Industry or at University with same credits.

Learning objectives:

- To give the students an experience of carrying out an individual project and sense of accomplishment associated with such an undertaking.
- To encourage the students to make a meaningful intellectual commitment to an engineering problem.
- To help in the development of one of the most important attributes of an engineer - self-discipline.
- To emphasize the use of fundamental concepts, and use of texts and references rather than rely on staff members for all of the answers.
- To emphasize the presentation of technical material by informal summary reports, drawings, formal reports and presentations.
- To help the students to critically evaluate their own work

Course Code: 19CP411P					**Course Name:** Comprehensive Project			
Teaching Scheme					**Examination Scheme**			
					Review			**Total**
L	**T**	**P**	**C**	**Hrs/ Wk**	**Continuous Evaluation Review**	**Mid Semester Review**	**End Semester Review**	**Marks**
0	0	38	19	38	30	30	40	100
Prerequisites: All core courses								
Comprehensive Project could be: Performed either in Industry or at University with same credits.								
Learning objectives:								

- To provide an opportunity to the final year student to understand / design / develop / implement systems involving relevant aspects of engineering and its applications, involving individual effort* by the student.

Scope of COMPREHENSIVE PROJECT

The students of B.Tech. (ICT and CE) programs are expected to work on Comprehensive Project in any of the ICT or CSE related areas. The different kinds of projects and the associated deliverables that could be accepted as a as the student's Comprehensive Project are conceived broadly as follows:

- Software Development
- System Design and Simulation
- Hardware Development / Implementation
- Embedded System (Software & Hardware combined) Development / Implementation
- Theoretical Modeling, Design and Analysis
- Technical Study including feasibility and comprehensive evaluation of technologies
- Technical Survey and Modeling
- Modules of a research and development project jointly guided by teams of faculty with a focus on synthesis of their class-room learning to solve real world problems

COMPREHENSIVE PROJECT could be:

- Based on novel/new idea
- An extension of a previous research work
- An extension of a previous Comprehensive Project
- An abstract problem
- The proof of concept for solving a problem
- An exhaustive study or survey of technology (involving the aspects of: feasibility, application, evaluation/performance, etc.)

*A group project is defined as a project where several students work in a group for the SAME problem; or the some sub-task of a larger problem or a problem set. In such a case, it is **mandatory** to clearly define the deliverables of each individual student, of the group.

Duration

The duration of Comprehensive Project will be in synchronization with the corresponding academic semester of PDPU. It is expected that the Comprehensive Project should be carried out and completed (along with evaluations) within the duration of academic semester.

Expectations from the (external/off-campus) organization where the student is pursuing the Comprehensive Project

- Provide an opportunity to the student to carry out a project that satisfies the objective, scope and guidelines of the final year student projects given above.
- An on-site supervisor is to be assigned, who would look after the project work of the student and interact/report about the student's progress and the project to the B.Tech program coordinator at PDPU.

- The on-site supervisor is expected to supervise the performance of the student in achieving the required milestones and is advised to send the feedback on a regular basis (as decided mutually) to the B.Tech program coordinator at PDPU.
- The student will be required to be physically present (as per the evaluation/presentation schedule announced by PDPU) on the PDPU campus. The organization is expected to allow the student to travel and attend evaluation sessions at PDPU.
- Comprehensive Project should be carried out and completed (along with evaluations) within the duration of academic semester of PDPU.
- The company's NDA (non-disclosure agreement), if any, should not prohibit the student to show the data, techniques, and/or results to the evaluation committee during the defense of the Comprehensive Project.

At the end of this course students will be able to do some of the following:

- Comprehensively investigate/study and development of software and/or algorithms in the related area.
- Development of Hardware / Embedded System/ ASIC (Circuits, HDL, FPGA, etc)
- Attempt to use the class-room learning to solve real world problems in the form of a team
- Design and apply different tools.

Expectations from the student, opting for external/off-campus Comprehensive Project

- The student is expected to complete the project work assigned by the on-site supervisor and is expected to meet all the milestones identified.
- The student is expected to follow the work-plan decided by his/her on-site supervisor. This includes reporting, leave and working hours during the project tenure.
- The student should report immediately to the on-site supervisor and B.Tech program coordinator (at PDPU) in the event of exceptional circumstances like illness.
- The student is expected to follow the rules and regulations of the organization as briefed by the on-site supervisor.
- The student is supposed to submit a “Project Report” in the prescribed format to the BTP program coordinator at PDPU by the announced date.
    - Project report can be 6 to 8 pages, and it has to be in the regular *IEEE Transaction* format. For templates, please refer to section “Templates for Transactions” on the following web link:
    - https://journals.ieeeauthorcenter.ieee.org/create-your-ieee-article/authoring-tools-and-templates/ieee-article-templates/templates-for-transactions/

Lecture:0 Hrs
Tutorial: 0 Hrs
Approximate Total: 494 Hrs

COURSE OUTCOMES:

At the end of this course the student will be able to

1. Comprehensively investigate/study and development of software and/or algorithms in the related area.
2. Think innovatively on the development of components, products, processes or technologies in the engineering field
3. Investigate new challenges in the IT domain and related multidisciplinary areas.
4. Apply the class-room learning to solve real world problems in the IT domain and related multidisciplinary areas.
5. Solve real world problems using different tools and technologies.
6. Effectively communicate research findings and outcomes in the form of technical reports/research papers.
7. Demonstrate an awareness and application of appropriate personal, societal, and professional ethical standards.
8. Practice the skills, diligence, and commitment to excellence needed to engage in lifelong learning.