

# SHIV NADAR UNIVERSITY

## Department of Computer Science and Engineering School of Engineering Doctor of Philosophy (PhD) - 2021

### Objectives

The program is designed to prepare students for highly rewarding careers in academia and research labs. The demand for quality PhDs is increasing at a rapid rate in the country, thereby creating an ever-widening gap between the demand and supply.

Depending upon the academic preparation, admitted students are exposed to a wide range of core and elective courses with in-depth syllabi, followed by a qualifying exam to test their knowledge. In addition to this, students write a research proposal and starts pursuing research that eventually culminates in a Ph.D. thesis. Such an excellent combination of academic excellence in subject matters and top-notch research equips SNU PhDs in CSE with strong knowledge and research skills necessary for pursuing highly productive careers in academia as well as in research labs.

### Overall Credit Structure for PhD (Full Time (FT) and Part Time (PT))

Eligibility for PhD	Core Credits	Bridge Credits	Elective Credits	Total Credits	Status
MTech (CSE)	12	-	Advised by DRC	12	FT, PT
MCA/M.Sc.(CS)	12	12	Advised by DRC	24	FT, PT
M.Sc. (Maths/Phy/Stat/OR)	12	12	12	36	FT

### Core Component (PC) – 32 credits

CSD711	Advanced Data Structures and Algorithms	3-0-1	4	CSD750	Independent Study	3-0-0	3
CSD712	Topics in Mathematical Sciences	3-1-0	4	CSD751	Internship / Mini Project	3-0-0	3
CSD713	Research Methodology	4-0-0	4	CSD801	Special Topics in Artificial Intelligence	3-0-0	3

### Elective Courses (PE)

CSD720	Advanced Data Management Systems	3-0-1	4	CSD802	Special Topics in Cyber Security	3-0-0	3
CSD721	Computational Neuroscience	3-0-1	4	CSD803	Special Topics in Data Science	3-0-0	3
CSD722	Computer Graphics	3-0-1	4	CSD804	Special Topics in Embedded Systems	3-0-0	3
CSD723	Foundation of Information Security	3-1-0	4	CSD805	Special Topics in Sensor Networks	3-0-0	3
CSD724	Information Retrieval	3-0-1	4	CSD810	Special Module in Artificial Intelligence	1-0-0	1
CSD725	Image Processing & Applications	3-0-1	4	CSD811	Special Module in Cyber Security	1-0-0	1
CSD726	Logic and Functional Programming	3-0-1	4	CSD812	Special Module in Data Science	1-0-0	1
CSD727	Machine Learning	3-0-1	4	CSD813	Special Module in Embedded Systems	1-0-0	1
CSD728	Natural Language Processing	3-0-1	4	CSD814	Special Module in Sensor Networks	1-0-0	1
CSD740	Applied Cryptography	3-1-0	4				
CSD741	Big Data Analytics	3-0-1	4				
CSD742	Computer Vision	3-0-1	4				
CSD743	Data Mining & Data warehousing	3-0-1	4				
CSD744	Deep Learning	3-0-1	4				
CSD745	Internet of Things	3-0-1	4				
CSD746	Performance Modelling Of Computer Communication Networks	3-1-0	4				
CSD747	Virtualization and Cloud Computing	3-0-1	4				
CSD748	Wireless Sensor Networks	3-0-1	4				
CSD749	Wireless and Mobile Systems	3-0-1	4				

### Bridge Courses

CSD610	Artificial Intelligence	3-0-1	4
CSD611	Computer Networks	3-0-1	4
CSD612	Database Management Systems	3-0-1	4
CSD613	Design and Analysis of Algorithms	3-0-1	4
CSD614	Operating Systems	3-0-1	4
CSD615	Computer Organization and Architecture	3-1-1	5
CSD616	Probability and Statistics	3-1-0	4