



**DHANALAKSHMI SRINIVASAN ENGINEERING COLLEGE
(AUTONOMOUS)**

(Approved by AICTE & Affiliated to Anna University, Chennai)

Re-Accredited by NAAC with 'A' Grade

Accredited by NBA for AERO, BME, CSE, ECE, EEE, IT & MECH.

PERAMBALUR-621212, TAMILNADU, INDIA.

Website: www.dsengg.ac.in



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

INNOVATIONS BY THE FACULTY IN TEACHING AND LEARNING

**TEACHING METHODS ADOPTED TO IMPROVE STUDENT LEARNING
RESOURCES AVAILABLE**

(DEPARTMENT LEVELS)

Innovations by the Faculty in teaching and learning shall be summarized as per the following description.

Contributions to teaching and learning are activities that contribute to the improvement of student learning. These activities may include innovations not limited to, use of ICT, instruction delivery, instructional methods, assessment, evaluation and inclusive class rooms that lead to effective, efficient and engaging instruction. Any contributions to teaching and learning should satisfy the following criteria:

- The work must be made available on Institute website.
- The work must be available for peer review and critique.
- The work must be reproducible and developed further by other scholars.

The department/institution may set up appropriate processes for making the contributions available to the public, getting them reviewed and for rewarding. These may typically include statement of clear goals, adequate preparation, use of appropriate methods, and significance of results, effective presentation and reflective critique.

The practice of effective and meaningful teaching can benefit immensely when educators thoughtfully experiment and apply new or different pedagogical approaches, technologies, curricular enhancement, course design and organization, and assessments. Classroom and course management innovations, including new ways of teaching that promote student engagement, reorganization of a course(s) that improves students' ability to apply what they learn, course content that clarifies historical changes, in theory, novel assignments that lead to increased student engagement, student publications, and/or activities that bring students from diverse backgrounds together.

The faculty members handling the subjects with new innovative methods in the classroom help to improve the creative ideas of the students.



WE ARE CATEGORIZING INNOVATION IN TEACHING-LEARNING PROCESS IN OUR DEPARTMENT INTO THREE ASPECTS AS SHOWN

VIDEO LECTURE

Video lectures created by the faculty members are made available in the institute website for the student's reference.

T.Geetha	https://youtu.be/nAUhJnglBD4
Jayapradha S	https://youtu.be/Apf5FmA0ye8
M.HEMALATHA	https://youtu.be/bkLUQaPeQpM
K.RAMYA	https://youtu.be/rPVmWkjI3YM
S.FRANCIS SHAMILI	https://youtu.be/1o3O9gHP9hs
GOKUL	https://youtu.be/AFrXvdeantA
CHINNADURAI	https://www.youtube.com/watch?v=Z2-T2AoS3rw
ARUNAPRIYA	https://youtu.be/56G2Q-NiQ20

OUTCOME

Apart from text book and class room lecture, the students will be able to refer this Offline video to clarify their doubts.

ROLE PLAY APPROACH

A specific topic will be given to a set of students where they will prepare themselves towards explaining the same by assuming every student with a role.

OUTCOME

Student understood the approach very well and in easy way how the concept/ procedure/ algorithm work

THINK, PAIR AND SHARE APPROACH

Given a topic or concept to any student to think and answer whereas other students will learn and evaluate his/her answer.

OUTCOME

One student think about the assigned topic and gives his/her views while another student evaluate that what is being learnt.

QUESTION SESSIONS (VIVA VOICE) FOR THE STUDENTS

Viva-Voice allows student to orally explain the concept clearly with a better understanding of concepts.

OUTCOME

This process is useful for the students to make class room interactive and understand the course in an efficient way.

THE WORK MUST BE MADE AVAILABLE ON INSTITUTE WEBSITE.

- The website provides information about the facilities of institution and also department.
- Easy access of the Academic Calendar, University exam Time Table and Learning Materials is enriched and is also continuously updated.
- For the betterment of student community video lectures are available on our college website.

THE WORK MUST BE AVAILABLE FOR PEER REVIEW AND CRITIQUE

DEPARTMENTAL INITIATIVES:

Some of the innovations done by faculty members of Computer Science and Engineering department so as to improve the teaching and learning process.



Elite
NPTEL ONLINE CERTIFICATION
(Funded by the MoE, Govt. of India)

This certificate is awarded to
DEVANAND R
for successfully completing the course
Cyber Security and Privacy
with a consolidated score of **60** %

Online Assignments	24.69/25	Proctored Exam	35.21/75
--------------------	----------	----------------	----------

Total number of candidates certified in this course: **9907**


Prof. Andrew Thangaraj
Chair
Centre for Outreach and Digital Education, IITM

Jul-Oct 2025
(12 week course)


Prof. Vignesh Muthuvijayan
NPTEL Coordinator
IIT Madras


 Indian Institute of Technology Madras


 FREE ONLINE EDUCATION
swayam
विद्यया विमुक्तये

Roll No: NPTEL25CS116S566200223
To verify the certificate 
No. of credits recommended: 3 or 4

S.No	Innovation	Courses used	Description	Impact on Learning	Academic Year
1	Questioning Strategies (Viva Voice)	In most of subjects questioning strategies are used	This process is helpful for the students to make classroom more interactive and motivates for consistent learning	Effective questioning sessions in classroom diagnose student's strengths and weaknesses and also develop thinking skills of the students	2019 - 2020

2	NPTEL Video Lectures	Computer Networks	Routing algorithm is explained by faculty as well as video lecture.	Apart from text book and syllabus students get adequate exposure of current technologies through these lectures.	2020 2021	-
3	Think, pair and share approach	Database Management System	Give SQL Queries to any student to think and answer where as other students will learn and evaluate his/her answer.	One student think about the assigned SQL Queries and gives his / her views while another student evaluate that what is being learn.	2021 2022	-
4	Role Play approach	Cryptography and Network Security	Assign Euclid's algorithm to find highest common factor to 6 students to perform whereas other students will learn and evaluate his/her answer.	Student understood the approach very well and in easy way how greedy algorithm work to optimize solution	2021 2022	-
5	Flipped Learning	In most of subjects are used questioning strategies	The students watch online lectures, collaborate in online discussions, or carry out research at home, while actively engaging concepts in the classroom, with the course teacher's guidance.	To increase student work on live problem-solving during class time.	2021 2022	-

6	Video Lectures	In most of subjects are used Video Lectures	The links are available in our college web portal. The college web site address is www.dsengg.ac.in	Apart from text book and syllabus students get adequate exposure of current technologies through these lectures	2022-2023
---	----------------	---	---	---	-----------

THE WORK MUST BE REPRODUCIBLE AND DEVELOPED FURTHER BY THE OTHER SCHOLARS

REPRODUCIBILITY:

- The information provided in the website is subjected to reproduce and developed further by the scholars, which leads to self-learning.
- Black Board is available at our college website.
- Few corrections are done in Course Handouts, Study Materials, Question Banks, Laboratory manuals and reproduced by the other faculty members.

STATEMENT OF CLEAR GOALS, USE OF APPROPRIATE METHODS, SIGNIFICANCE OF RESULTS, EFFECTIVE PRESENTATION AND REFLECTIVE CRITIQUE.

STATEMENT OF CLEAR GOALS:

- The faculty members are encouraged to participate in workshops and FDP on advanced topics to keep pace with the advanced level of knowledge and skills.
- To enrich the knowledge of faculty through Faculty Enrichment Programme (FEP) and encourage to participate/present papers in National/International Conferences also to publish articles in National/International Journals.

USAGE OF APPROPRIATE METHODS

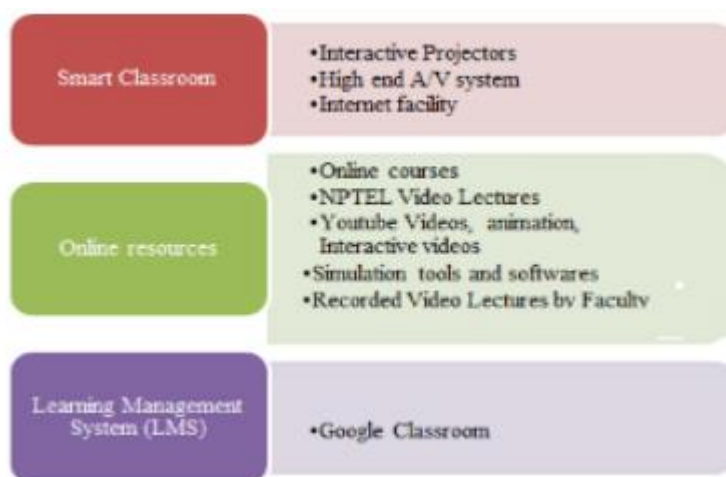
Question banks are prepared based on subsequent occurrence on university question paper for all the courses of the department of Computer Science and Engineering are being transferred into the institute website regularly the same is also circulated via group email id. This approach

helps the students to concentrate on specific problems which help in improving the results of slow learners.

- Guest lectures, workshops and Seminars are conducted to update students' knowledge in their stream. This mode of approach helps the rapid learners to enhance the technical skills to a greater extent and enrich their concepts in the curriculum with the industrial oriented applications.
- Chalk and talk method is the common mode of content delivery.
- Usage of LCD projectors and activity-based learning methodology are used whenever required.
- Batch wise determination and three modes of assignments (Written/PPT/Seminar) are implemented.
- Encourage the students towards undergoing In-plant training and hands on training.
- Aids like Text books, Reference books, Supplementary books and University question banks are used.
- Sophisticated resources are provided to support the advancements in pedagogy on campus. Well-equipped and enormous facilities are provided for technological efforts.

ICT TOOLS

Use of ICT tools helps a faculty member to engage students in effective learning and enables learning beyond the classroom.



ICT TOOLS PRACTICED IN OUR DEPARTMENT THROUGH THE FOLLOWING ASPECTS IS ILLUSTRATED IN

SMART CLASSROOM

Every classroom at our institute is equipped with an interactive projector, Audio and Video system with an internet facility. Classrooms facilitate the instructor and students to use both ICT tools enabled learning and conventional chalk-talk learning.



ONLINE RESOURCES

All the faculty members are encouraged to use online resources to improve the teaching-learning process. Every faculty member had a practice of pursuing an online course every semester related to the course which makes them be updated. This helps the faculty members to prepare well for lectures.

Use of NPTEL videos and conceptual videos add value to our teaching-learning process.

Use of virtual lab (hosted by IIT), simulation tools and software make the students get insight knowledge on the subject.



Elite

NPTEL ONLINE CERTIFICATION

(Funded by the MoE, Govt. of India)



This certificate is awarded to
T GEETHA
for successfully completing the course

Cyber Security and Privacy

with a consolidated score of **70** %

Online Assignments	24.38/25	Proctored Exam	45.82/75
--------------------	----------	----------------	----------

Total number of candidates certified in this course: **9907**

Prof. Andrew Thangaraj
Chair
Centre for Outreach and Digital Education, IITM

Jul-Oct 2025
(12 week course)

Prof. Vignesh Muthuvijayan
NPTEL Coordinator
IIT Madras



Indian Institute of Technology Madras



Roll No: NPTEL25CS116S566200256

To verify the certificate



No. of credits recommended: 3 or 4

LEARNING MANAGEMENT SYSTEM (LMS)

Encouraging the students to learn beyond the classroom environment is achieved in our department by using Learning Management System (LMS). Google classroom is created for all the courses through which the students can access learning resources at any time.

Innovative learning methods are initiated and implemented by the faculty for students to learn in a better manner.