SHREE VENKATESHWARA HI TECH ENGINEERING COLLEGE
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
INNOVATIONS BY THE FACULTY IN TEACHING AND LEARNING

Adoption of Innovative Practices

S.NO	SUBJECT CODE	SUBJECT NAME	SUBJECT INCHARGE	QUIZ	ASSIGNMENTS	GROUP DISCUSSIONS	NPTEL VIDEO
1	OHS352	PROJECT REPORT WRITING	Dr.T.SENTHIL PRAKASH Prof & Head / CSE	ESSENTIAL GRAMMAR AND VOCABULARY, REPORT WRITING IN STEM FIELD, STRUCTURE OF THE PROJECT REPORT	PASSIVE VOICE, REPORTED SPEECH, CONCORD, SIGNPOST WORDS, COHESIVE DEVICES,PROJECT REPORT, FRAMING A TITLE, LITERATURE REVIEW, PROOF READING A REPORT	PROJECT REPORT WRITING	https://archive.nptel.ac.in/courses/110/105/110105091/
2	CS3491	ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING	Dr.R.SENTHILKUMAR ASP/CSE	PROBLEM SOLVING AGENT PROBABILISTIC REASONING	PROBLEM SOLVING AGENTS, NAÏVE SPACE MODELS, LINEAR CLASSIFICATIONS MODELS, COMBINING MULTIPLE LEARNER, HYPER PARAMETER TUNING	AI TAKE OVER HUMAN CREATIVITY, AI POWERED ROBOTICS TRANSFORM INDUSTRIES LIKE HEALTHCARE AND MANUFACTURING	https://archive.nptel.ac.in/noc/courses/noc22/SEM1/noc22-cs02/
3	CS3501	COMPILER DESIGN	Ms.K.INDHUMATHI AP/CSE	STACK AND HEAP ALLOCATION ,PREDICTIVE PARSER-LL(1)	PREDICTIVE PARSER, LOOPS IN FLOW GRAPH, ERROR HANDLING AND RECOVERY IN SYNTAX ANALYZER	PHASES OF COMPILER	https://archive.nptel.ac.in/courses/106/105/106105190/
4	CS3591	COMPUTER NETWORKS	Mrs.S.MAHALAKSHMI AP/CSE	ROUTING AND PROTOCOLS ,UDP ,TCP	HTTP/FTP, DNS, PACKET SWITCHING, TRANSPORT LAYER PROTOCOL	OSI MODELS	https://archive.nptel.ac.in/courses/106/105/106105183/
5	CS3492	DATABASE MANAGEMENT SYSTEMS	Mrs.S.KOKILA AP/CSE	DATABASE SYSTEM ARCHITECTURE	ADVANCED SQL FEATURES, MULTIVALUED DEPENDENCIES, DEADLOCK HANDLING,B TREE INDEXING FILE, ENCRYPTION AND PUBLIC KEY INFRASTRUCTURE	THE ROLE OF DBMS IN BIG DATA AND CLOUD COMPUTING	https://archive.nptel.ac.in/courses/106/105/106105175/

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6	AI3021	IT IN AGRICULTURAL SYSTEMS	Mrs.P.LOGESHWARI AP/CSE	AGRICULTURAL SYSTEMS MANAGEMENT	PRECISION AGRICULTURE, ARTIFICIAL LIGHT SYSTEM, RELIABILITY OF AGRICULTURAL SYSTEM, IMPORTANCE OF CLIMATE VARIABILITY,, TECHNOLOGY ENHANCED LEARNING SYSTEMS AND SOLUTIONS	IMPORTANCE OF CLIMATE VARIABILITY AND SEASONAL FORECASTING	https://archive.nptel.ac.in/courses/126/105/126105016/
7	23CST31	FOUNDATION OF DATA SCIENCE	Mr.P.SATHYARAJ AP/CSE	TYPES OF VARIABLE ,HIERARCHICAL INDEXING	DATA PREPARATION, MULTIPLE REGRESSION EQUATION,	CHALLENGES OF IMPLEMENTING DATA SCIENCE IN ORGANIZATION	https://archive.nptel.ac.in/courses/106/106/106106212/
8	CCS356	OBJECT ORIENTED SOFTWARE ENGINEERING	Mrs.P.M.MANOCHITRA AP/CSE	AGILE PROCESS ,TESTING	SOFTWARE ENGINEERING, FINITE STATE MACHINE, SOFTWARE DESIGNING, VALIDATION TESTING,DEVOPS	THE ROLE OF UML IN OOSE	https://archive.nptel.ac.in/courses/106/105/106105153/
9	CB3491	CRYPTOGRAPHY AND CYBER SECURITY	Mrs.P.MURUGAPRIYA AP/CSE	AI SECURITY.	CRITICAL INFRASTRUCTURE SECURITY,ENDPOINT SECURITY,INFORMATION SECURITY. MOBILE SECURITY.	CYBER SECURITY AND ITS IMPACT ON SOCIETY	https://archive.nptel.ac.in/courses/106/105/106105031/
10	CCS375	WEB TECHNOLOGIES	Mrs.K.G.GEERTHIDEVI AP/CSE	HTML,CSS,PHP	WEB-BASED SCHOOL MANAGEMENT MOBILE APPLICATION,THE DARK WEB, ITS STRUCTURE AND FUNCTIONALITY	AIM AND IMPORTANCE OF WEB TECHNOLOGY	https://archive.nptel.ac.in/courses/106/105/106105084/
11	CCS354	NETWORK SECURITY	Mr.D.SENTHILKUMAR AP/CSE	EMAIL SECURITY, NETWORKS SUPPORT	REMOTE ACCESS VPN.NETWORK SEGMENTATION,HYPERSCALE NETWORK SECURITY,EMAIL SECURITY	IMPORTANCE OF CYBER SECURITY	https://archive.nptel.ac.in/courses/106/105/106105162/

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12	CS3401	ALGORITHMS	Mr.T.ARUNPRAKASH AP/CSE	N-QUEEN PROBLEM, HAMILTON CIRCUIT PROBLEM, SUBSET SUM PROBLEM	RABIN CARP ALGORITHM, GRAPH ALGORITHM, MERGE SORT AND QUICK SORT, N-QUEEN PROBLEM, BIN PACKING PROBLEM	THE ROLE OF ALGORITHM IN ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING	https://archive.nptel.ac.in/courses/106/105/106105164/
13	CS3451	INTRODUCTION TO OPERATING SYSTEMS	Mrs.K.PRATHIPA AP/CSE	MASS STORAGE SYSTEM, DISK STRUCTURE	BASIC ELEMENTS OF OPERATING SYSTEM, THREADING MODELS, PAGE REPLACEMENT, MASS STORAGE STRUCTURE, MOBILE OS ANDROID	ROLE OF OPERATING SYSTEM IN MODERN COMPUTING	https://archive.nptel.ac.in/courses/106/106/106106144/
14	CS8601	MOBILE COMPUTING	Ms.P.KALAISELVI AP/CSE	GSM SERVICE AND ARCHITECTURE, VANET	TELECOMMUNICATION SYSTEM, STORAGE ORGANIZATION, VANET, WIRELESS APLLICATION PROTOCOL, MOBILE OS	MULTIPLEXING:EFFICIENT DATA TRANSMISSIONS IN NETWORKS	https://archive.nptel.ac.in/courses/106/106/106106147/
15	CS8691	ARTIFICIAL INTELLIGENCE	Mr.J.SENTHILKUMAR AP/CSE	ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING	COMBINING MULTIPLE LEARNER, HYPER PARAMETER TUNING	AI TAKE OVER HUMAN CREATIVITY, AI POWERED ROBOTICS TRANSFORM INDUSTRIES	https://archive.nptel.ac.in/noc/courses/noc22/SEMI/noc22-CS02
16	CCS352	MULTIMEDIA AND ANIMATION	Mrs.V.KARTHIKEYANI AP/CSE	MULTIMEDIA AUTHORING	MULTIMEDIA DATABASE AND HYPERMEDIA, COLOR IN IMAGE AND VIDEO, MULTIMEDIA ELEMENTS, ANIMATION TECHNOLOGY, ONLINE SOCIAl NETWORKING MULTIMEDIA ONTOLOGY	THE ROLE OF SOUND DESIGN IN ANIMATION	https://nptel.ac.in/courses/117105083
17	CB3491	CRYPTOGRAPHY AND CYBER SECURITY	Mrs.P.MURUGAPRIYA AP/CSE	AI SECURITY.	CRITICAL INFRASTRUCTURE SECURITY,ENDPOINT SECURITY,INFORMATION SECURITY. MOBILE SECURITY.	CYBER SECURITY AND ITS IMPACT ON SOCIETY	https://archive.nptel.ac.in/courses/106/105/106105031/

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18	23CST21	PROGRAMMING IN C	Mrs.D.DEEPANA AP/CSE	FILES, TYPES OF FILES PROCESSING	ARRAY, CATEGORIES OF FUNCTION, STATIC VS DYNAMIC ALLOCATIONS	C PROGRAMMING STILL RELEVANT IN MODERN SOFTWARE DEVELOPMENT	https://archive.nptel.ac.in/courses/106/104/106104128/
19	23CST11	PROBLEM SOLVING AND PYTHON PROGRAMMING	Mrs.N.KOWSALYA AP/CSE	ITERATION, RECURSION, CONTROL STATEMENTS	NOTATIONS PSEUDO CODE, PROGRAMMING LANGUAGE	PYTHON VS OTHER PROGRAMMING LANGUAGES IN PROBLEM SOLVING	https://nptel.ac.in/courses/106104074
20	CS8080	INFORMATON RETRIEVAL TECHNIQUES	Mrs.R.PREMALATHA AP/CSE	TF-IDF,VECTOR MODEL	IR SYSTEM, RELEVANCE FEEDBACK AND QUERY EXPANSION, SUPERVISED ALGORITHMS, SEARCH ENGINE ARCHITECTURE, COLLABORATIVE FILTERING	THE IMPACT OF AI ON INFORMATION RETRIEVAL TECHNIQUES	https://archive.nptel.ac.in/courses/106/105/106105163/
21	23CST11	PROBLEM SOLVING AND PYTHON PROGRAMMING	Mrs.T.DEEPIGAA AP/CSE	FUNDAMENTAL ALGORITHMS, PYTHON RESERVED WORDS	BASIC ARCHITECTURE OF A COMPUTER, COMPUTATIONAL THINKING, UNDERSTANDING ERROR MESSAGES, OPERATORS	PROBLEM SOLVING MINDSET IN PYTHON DEVELOPMENT	https://nptel.ac.in/courses/106104074
22	CS3452	THEORY OF COMPUTATION	Mr.E.ARUNKUMAR AP/CSE	AUTOMATA THEORY	MODELS OF COMPUTATION, POLYNOMIAL TIME, UNIVERSAL ALGORITHMS	THE BASIC CONCEPTS OF THE THEORY OF COMPUTATION	https://archive.nptel.ac.in/courses/106/104/106104148/

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Web: http://www.svhec.com/

INNOVATIONS BY THE FACULTY IN TEACHING AND LEARNING

To enhance the learning experience of students, faculty members of our institution are using innovative methods of teaching and learning process, like e-materials, models, charts, video lectures, role play, mini projects, quiz, student presentation, 3 minutes talk, self-learning, interactive learning, collaborative learning, content beyond the syllabus, workshop and industrial visits. This helps the faculty member to shift conventional method of teaching. The selective list of instructional methods available is given in Table

Name of the Faculty	Name of the Subject	Topic	Instruction Method used
M.Rajesh	Computer Networks	Bluetooth, Wireless LAN and Connecting Devices	Demonstration with kit, Simulation
J.Senthilkumar	Theory of Computation	Automata	NPTEL video lectures
P.V.Jothikandham	Cryptographic and Network Security	Advanced encryption Standard	Animation, NPTEL video lectures
K.Prathipa	Data Structure	Stack and Queue, Tree	Role-play, Animation, Quiz, Real Time Examples
K.Indhumathi	Design and Analysis of Algorithm	LIFO and FIFO Search	Role-play, Animation, NPTEL video lectures, Industry Visit

➢ Video lectures by the senior faculty members of our Institute and eminent resource persons from other premier institutions, innovations and research works carried out by the faculty and students are available in the institute website (http://svhec.com/)

➢ Faculty Lectures are conducted with ICT and the following strategies are also used to enhance the students learning Question and Answers

  ➢ Mapping with real world examples
  ➢ Discussion on applications related to context and activities like Role Playing Interaction on topics
  ➢ Conducting Games and quiz related to concepts

➢ Learning materials are available in the institute Learning Management System (LMS) for knowledge sharing

➢ E-Journals and E-Books are made available in the digital library for the benefit of Students and Faculty members

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➢ Faculty members are encouraged to publish research articles in referred Journals, presenting papers in Seminars, Conferences etc., All the faculty members are encouraged to participate in SWAYAM, NPTEL, Amrita Virtual Lab, MOOCs, Spoken Tutorials etc.,

➢ Screen cast subject videos are uploaded in YouTube public domain by the faculty members to improve the students learning and listening skills

State-of-the-Art facilities for training activities

Auditorium with LED projectors, seminar halls with ICT, Internet Connectivity which facilitate the faculty to deliver the training activities effectively.

Technology Workshops for hands on experience

Workshops and Training programmes are conducted by the industry experts. Table shows the details of the Industrial Training Programs for Faculty.

S.No.	Academic Year	Training on Topic	Industry	Date	No. of Faculty Attended
1.	2021-22	Java in Industry	Dream Techno Park	11.03.2022 13.03.2022	2
2.		Data Analytics	Caliber Embedded Technologies, Salem	05.04.2022 07.04.2022	2
3.		Python Programming	SS Technovision, Coimbatore.	21.04.2022 23.04.2022	1
4.	2020-21	OOPs in Industry (Java)	Dream Techno Park	26.12.2021 28.12.2021	2
5.		Big Data Analytics	SS Technovision, Coimbatore.	06.04.2021 08.04.2021	1
6.		Web Technology	Caliber Embedded Technologies, Salem	01.05.2021 03.05.2021	2
7.		C and C++ Programming in Industry	Caliber Embedded Technologies, Salem	15.01.2021 17.01.2021	3
8.	2019-20	Webinar on Machine Learning	SS Technovision, Coimbatore.	26.12.2020 28.12.2020	2
9.		Data base connectivity	Caliber Embedded Technologies, Salem	07.05.2020 09.05.2020	2
10.		Industrial Programming styles	Dream Techno Park	22.05.2020 25.05.2020	2

Table

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Wi-Fi Campus

A 24x7 secured Wi-Fi facility plays a vital role for both Faculty and students in getting connected to global network.

Some of the learning innovations made by the faculty
Following parameters were chosen and a competition was conducted among the classes by Faculty members
- ➢ Online courses registration and completion
- ➢ English speaking campus
- ➢ Collection and distribution of e-materials

Smart Class room facilities:
All the classrooms in SVHEC are Information and Communication Technology (ICT) enabled and is equipped with LCD projectors, computers connected to Internet to utilize the e-resources as a support for the subjects being taught. This enhances the learning experience of the students

Role playing based teaching:
Role play stimulates the imagination and enhance the social development, encourages friendship through cooperation, listening and turn taking. This activity makes the students to develop their knowledge on a specified topic. It solves a particular issue, which creates an opportunity for decision making in a given environment.

Group discussion and 3 minute talk:
Faculty members are using Group discussion, debate and 3 minutes talk based teaching as another innovative Methods. The students are encouraged to deliver a innovative technology for the period of 3 minutes talk which enhances the speaking ability. Learning innovations used by the faculty members for handling the classes (sample subjects) is given in Table

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S.No.	Course Title	Activity	Topic	Team Members
1.	CS6701 Cryptography and Network Security	Role play	Diffee Helman Key Exchange	Jansirani M (732517104012) Sowndharya R.P (732517104047)
		Group discussion	Kerberos	Kanmani M (732517104016) Manju S(732517104021) Kalaivani A(732517104014)
		Debate	Symmetric and Asymmetric Encryption	Shwetha P (732517104043) Nishanthini S(732517104027) Mathina L(732517104023) Vanitha R(732517104311)
2.	CS8391 Data Structures	Group discussion	Stack Implementation	Ajay M(732518104001) Divya G (732518104011) Vigneshwaran P (732518104043) Pavithra C (732518104022)
		Role play	Binary trees	Kavin CS (732518104019) Prasanna V (732518104026)
		Debate	Breadth-first traversal & Depth-first traversal	Ragamalya S(732518104029) Sindhu C (732518104033) Vairamani G(732518104042)

Table

Multimedia Presentation:

Multimedia presentation through video projector enables to project the interactive lesson onto the board which encourages student's critical thinking, problem solving ability, discussion and collaboration

Use of ICT:

It is defined for the purpose of learning process, as a diverse set of technological tools and resource used to communicate, disseminate, store and manage information

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Other e-tool utilizations: Table   consists of various e tools used for teaching learning process

Tools	Methods	descriptions
MS Power point	It can be prepared with many of the popular multimedia elements like graphs, models, sound & videos, etc.,	Slide based
NPTEL, Online spoken tutorial, Swayamcourses	Presentation is created and explained by Experts in its specificdomain	Video based
Windows movie maker	Presentation is created using movie making concepts of casts,sounds, pictures and scores	Movie based
E-Campus	Course material is available at college website	e content
Virtual labs	Presentation of lab practical and clear demonstration aregiven	Application based

In addition to the classroom interactions, following the other methods of learning experiences provided by the faculty members to the students:

 ➢ Project work and Working with real time projects in Incubation (CSE Incubation centre)
 ➢ Python Project based training
 ➢ Short/long term Industrial visits
 ➢ Internships/Inplant training
 ➢ Oral presentation
 ➢ Technical Seminars/ symposiums/ workshops
 ➢ Technical paper presentations/ Group discussion
 ➢ Laboratory Teaching
 ➢ Three minutes talking method