



# FRANCIS XAVIER<sup>®</sup> ENGINEERING COLLEGE AN AUTONOMOUS INSTITUTION

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## Department of Computer Science and Engineering

### 6<sup>TH</sup> BOARD OF STUDIES MEETING

FXEC\CSE\2020-2021\BOS-6 Minutes

Mode: Through Online (Meeting Link: <https://meet.google.com/buw-xnap-ncf>)

Venue: Google Meet

Date & Time: 18.12.2021 & 11:00 AM

#### AGENDA

BoS / CSE 6.1: Welcome address and Opening Remarks by Chairman, Board of studies in the Department of Computer Science and Engineering

BoS/CSE 6.2: Confirmation of the Minutes of the 5<sup>th</sup> meeting of Board of studies in the department of Computer Science and Engineering held on 23.06.2021 and Action taken report of 5<sup>th</sup> meeting of Board of studies

BoS /CSE 6.3: Business brought forward by the Chairman, Board of Studies

6.3.1 Curriculum & Syllabus for R2021 B.E Computer Science and Engineering (3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> Semester)

6.3.2 Curriculum & Syllabus for R2021 ME Computer Science and Engineering (3<sup>rd</sup> Semester)

6.3.3 Curriculum & Syllabus for R2021 ME Computer Science and Engineering (with Specialization in Networks) (3<sup>rd</sup> Semester)

6.3.4 Specialization /Minor Courses from 5<sup>th</sup> semester R2019

6.3.5 NPTEL Courses from 5<sup>th</sup> semester R2019

BoS / CSE 6.4: Suggestions given by the BOS Members

BoS / CSE 6.5: Any other items for discussion

Minutes of the 6<sup>th</sup> Board of Studies Meeting

## DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING MINUTES OF THE MEETING

The 6<sup>th</sup> Meeting of the Board of studies of the Department of Computer Science and Engineering was held on 18<sup>th</sup> December 2021 at 11 am through online.

The following members were present:

1. Head of BOS

**Prof. Dr.G.Aravind Swaminathan**, Professor/Head,  
Department of Computer Science and Engineering,  
Francis Xavier Engineering College,  
Tirunelveli

2. University Nominee

**Dr.S.Padmavathi**  
Professor,  
Department of Information Technology,  
Thiagarajar College of Engineering,  
Madurai-625015

3. Academic Experts

**Dr.E.Ilavarasan**  
Professor/CSE,  
Pudhucherry Technological University (Formally Pondicherry Engineering College),  
Pondicherry- 605014.

**Dr.D Murugan**  
Professor/CSE,  
Manonmanium Sundaranar University,  
Tirunelveli-627012

4. Industrial Experts

**Mr.B.Durgasanth**  
Technical Lead,  
Rishon Communication Technologies,  
Tirunelveli

5. Alumni Members

**Mr.A.Alan Selva Denis**  
System Engineer  
Tata Consultancy Services  
Chennai -603103

## 6. Internal Members

S. No	Name of the Member	Designation
1.	Dr.R.Ravi	Professor/CSE
2.	Dr.S.Balaji	Professor/CSE
3.	Mrs.P.Brundha	Professor/CSE
4.	Dr.S.Gomathi	Professor/CSBS
5.	Dr.C.Yesubhai Rubavathy	Professor/CSE
6.	Dr.E.Manohar	Assoc. Prof / CSE
7.	Mr.J.Zahariya Gabriel	AP/ CSE
8.	Mrs.J.Priskilla Angel Rani	AP/ CSE
9.	Mr.K.Sivakumar	AP/ CSE
10.	Mrs.N.Raja Priya	AP/ CSE
11.	Mr.S.Malaiarasan	AP/ CSE
12.	Mrs.P.Jenifer	AP/ CSE
13.	Mrs.M.Sharon Nisha	AP/ CSE
14.	Mrs.B.Benita	AP/ CSE
15.	Mr.M.Mukesh Krishnan	AP/ CSE
16.	Dr.R.Tino Merlin	AP/ CSE
17.	Mr.M.A.Y.Peer Mohamed	AP/ CSE
18.	Ms.R.Valarmathi	AP/ CSE
19.	Mrs.A.Muthulakshmi	AP/ CSE
20.	Mrs.P.Anishya	AP/ CSE
21.	Mrs.M.Bagya Lakshmi	AP/ CSE



7. Ex-officio Members

Principal, Francis Xavier Engineering College, Tirunelveli

Professor Academics, Francis Xavier Engineering College, Tirunelveli

Controller of Examinations, Francis Xavier Engineering College, Tirunelveli

**Members Absent -Nil**

Board of Studies Meeting started with a prayer by Assistant Professor, Mrs.J.Priskilla Angel Rani

**BoS / CSE 6.1: WELCOME ADDRESS AND OPENING REMARKS BY CHAIRMAN, BOARD OF STUDIES IN THE DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

The Chairman, BOS of the Computer Science and Engineering welcomed and introduced the members of 6<sup>th</sup> Board of Studies and thanked each of them for sparing their valuable time to attend the meeting.

**BoS /CSE 6.2: TO CONFIRM THE MINUTES OF FOURTH BOS MEETING HELD ON 23.06.2021**

The minutes of the Fifth Board of Studies meeting held on 23.06.2021 were communicated to the members. The comments received have been incorporated and placed for confirmation. The same was approved by the 5<sup>th</sup> Academic Council.

**BoS / CSE 6.3: Business brought forward by the Chairman, Board of Studies**

**BoS / CSE 6.3.1: TO CONFIRM AND APPROVE the Curriculum & (3<sup>rd</sup>,4<sup>th</sup> and 5<sup>th</sup> semester) Syllabus for R2021 B.E Computer Science and Engineering**

8 Semester Curriculum and 3 Semester Syllabus were framed and it was presented by the chairman BOS

- ✓ RESOLVED TO APPROVE the Curriculum & Syllabus for R2021 B.E Computer Science and Engineering

**BoS / CSE 6.3.2: TO CONFIRM AND APPROVE the Curriculum & (3<sup>rd</sup> semester) Syllabus for R2021 M.E Computer Science and Engineering**

4 Semester Curriculum and 1 Semester Syllabus were framed and it was presented by the chairman BOS

- ✓ RESOLVED TO APPROVE the Curriculum & Syllabus for R2021 M.E Computer Science and Engineering

**BoS / CSE 6.3.3: TO CONFIRM AND APPROVE the Curriculum & (3<sup>rd</sup> semester) Syllabus for R2021 M.E Computer Science and Engineering (with Specialization in Networks)**

4 Semester Curriculum and 1 Semester Syllabus were framed and it was presented by the chairman BOS

- ✓ RESOLVED TO APPROVE the Curriculum & Syllabus for R2021 M.E Computer Science and Engineering (with Specialization in Networks)

**BoS / CSE 6.3.4: TO CONFIRM AND APPROVE the Specialization/Minor Courses**

The Specialization/ Minor Courses in Cyber Security has been proposed and 2 Theory Courses, 2 Theory cum Practical courses and one Project work with 18 credits and their syllabus was presented by the chairman BOS

- ✓ RESOLVED TO APPROVE the Specialization/Minor Courses

**BoS / CSE 6.3.5: TO CONFIRM AND APPROVE the NPTEL Courses**

The List of NPTEL Online Courses to be opted for the students from 5<sup>th</sup> semester instead of Professional core subjects in the overall curriculum were discussed

- ✓ RESOLVED TO APPROVE the NPTEL Courses

**BoS / CSE 6.4: Suggestions Given by the Members**

**Semester -3 Syllabus for R2021 B.E Computer Science and Engineering**

- 6.4.1 21CS3601-Data Structures the 5<sup>th</sup> objective must be included
- 6.4.2 21CS3603-Object Oriented Programming Systems the prerequisite for the course Python Programming must be removed

**Semester -4 Syllabus for R2021 B.E Computer Science and Engineering**

- 6.4.3 21CS4601-Database Management Systems, NoSql can be added to DBMS concepts
- 6.4.4 21CS4603-Computer Architecture the 2<sup>nd</sup> course outcome must be checked
- 6.4.5 21CS4605-Operating System Concepts, in each unit include case study and in practical include Installation of Linux OS as first Experiment and System calls and fork
- 6.4.6 In all the courses include NPTEL in web Resources and Maximum 5 Reference books
- 6.4.7 The CO vs PO Mapping and CO vs PSO Mapping must be redefined for all the courses



### **Semester -5 Syllabus for R2021 B.E Computer Science and Engineering**

- 6.4.8 In Professional Core, 21CS5602- Computer Networks, IP Basics like IP assignments can be added
- 6.4.9 In Professional Elective-I, Data Warehousing and Data Mining course can be replaced with 21CS5705-Agent Based Intelligent System
- 6.4.10 In Professional Elective-I, 21CS5703- Introduction to IoT and its applications title can be renamed as IoT and its applications

### **Semester -3 Syllabus for R2021 M.E Computer Science and Engineering**

- 6.4.11 The Courses from Professional Elective-IV 21CP3710 - Bio Inspired Computing and Professional Elective-V, 21CP3714 -Bio Informatics can be combined as 2 units from Bio Inspired Computing and 3 units from Bio Informatics
- 6.4.12 In Professional Elective-V, 21CP3714 - Bio Informatics Course can be replaced with Advanced Communication Systems

### **Semester-3 Syllabus for R2021 M.E Computer Science and Engineering(with Specialization in Networks)**

- 6.4.13 In Professional Elective-III, 21NE3704- Software Defined Networks and Network Function Virtualization (SDN and NFV) course title can be renamed as Software Defined Networks
- 6.4.14 In Professional Elective-IV, 21NE3706 - Protocols and Architectures for Wireless Sensor Networks course title can be renamed as Advanced Wireless Sensor Networks
- 6.4.15 In Professional Elective-IV, 21NE3707- Information Storage Management Course can be replaced with Artificial Intelligence and Data Analytics


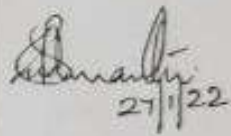

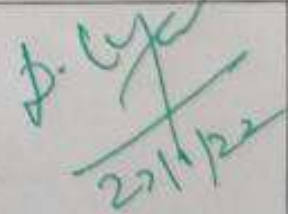

### **BoS / CSE 6.5: Any other items for discussion**


- 6.5.1 In Professional Elective-II, 21CS6704- Designing with Raspberry Pi course title can be renamed as Micro Controlled Based System Design
- 6.5.3 In Specialization/Minor Courses, Elective course Database Security can be replaced with Networks and Information Security
- 6.5.4 The NPTEL courses which are not in curriculum are replaced with Elective courses with 8 to 12 weeks as 3 credits

Dr.G.Aravind Swaminathan, Professor/HOD thanked all the members for their kind cooperation and the meeting came to an end.



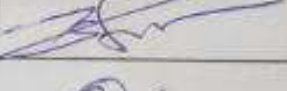



  
22/01/2022  
CHAIRMAN  
BOARD OF STUDIES

**Attendance Sheet Table of Members:**

S. No	Members as per UGC Norms	Members Nominated	Signature
1	Head of the Department concerned (Chairman)	<b>Dr.G.Aravind Swaminathan,</b> Professor/Head, Department of Computer Science and Engineering, Francis Xavier Engineering College, Tirunelveli	 27/01/2022
2	One Expert nominated by the Vice Chancellor from a panel of six recommended by the college Principal	<b>Dr.S.Padmavathi</b> Professor, Department of Information Technology, Thiagarajar College of Engineering, Madurai-625015	 27/1/22
3	Two experts in the subject from outside the college nominated by the Academic Council	<b>Dr.E.IIavarasan</b> Professor/CSE, Pudhucherry Technological University(Formerly Pondicherry Engineering College), Pondicherry- 605014.	
		<b>Dr.D Murugan</b> Professor/CSE, Manonmanium Sundaranar University, Tirunelveli-627012	
4	One representative from industry/corporate sector/allied area relating to placement	<b>Mr.B.Durgasanth</b> Senior Software Development, Rishon Communication Technologies,	

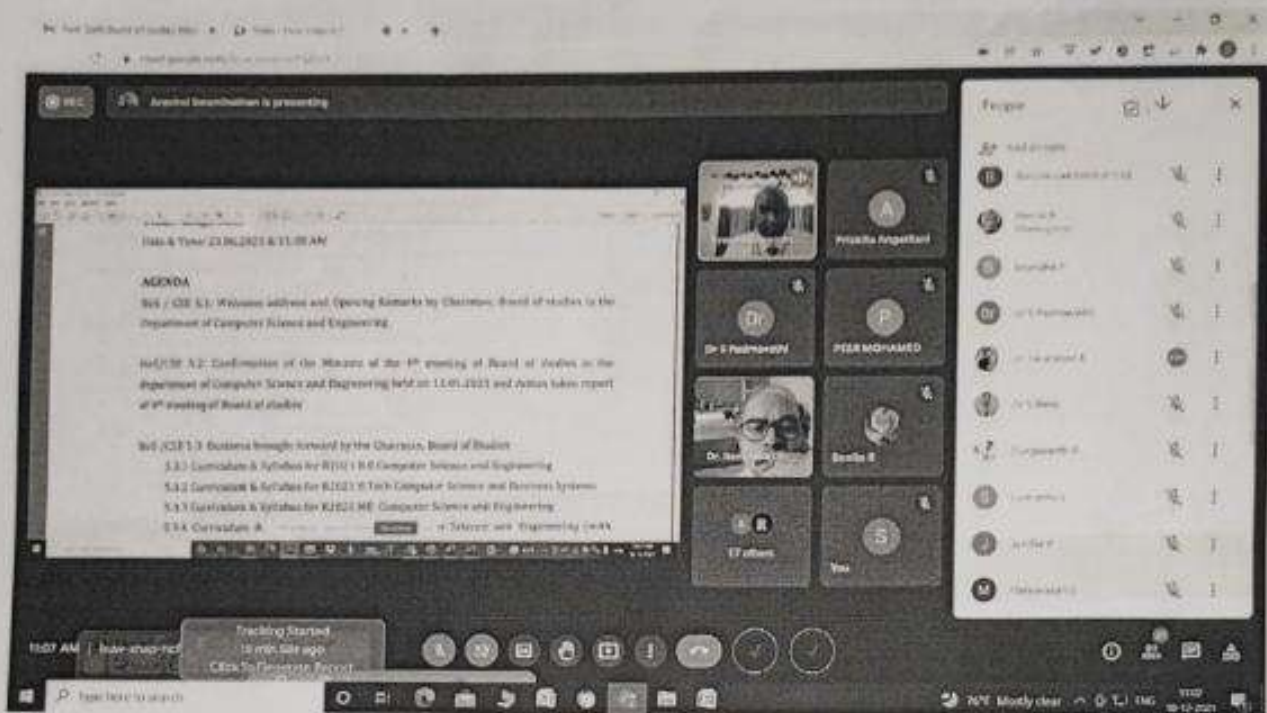
5	One Post Graduate meritorious aluminous nominated by the Principal	<b>Mr.A.Alan Selva Denis</b> System Engineer Tata Consultancy Services Chennai -603103	
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20.	Mrs.P.Anishya	AP/ CSE	
21.	Mrs.M.Bagya Lakshmi	AP/ CSE	

# Department of Computer Science and Engineering on 18.12.2021

Google online meet link: <https://meet.google.com/buw-xnap-ncf>











**Annexure - I**

**Specialization/ Minor Courses**

S.No	Course Code	Course Name	L	T	P	C	H
<b>Theory Course</b>							
1	CS-01	Cyber Security Management And Cyber Law	3	0	0	3	3
		Elective	3	0	0	3	3
<b>Theory cum Practical Courses</b>							
1	CS-02	Cyber Security Essentials	2	0	4	4	4
3	CS-03	Forensics and Incident Response	2	0	4	4	4
<b>Practical Course</b>							
1.	CS-04	Project work	0	0	8	4	8
<b>Total</b>			10	0	16	18	22
<b>Elective Courses</b>							
1	CS-05	Cloud Security	3	0	0	3	3
2	CS-06	Networks and Information Security	3	0	0	3	3
3	CS-07	Mobile And Wireless Security	3	0	0	3	3

## Annexure - II

### LIST OF NPTEL COURSES

S.NO	COURSE CODE	COURSE NAME	DURATION (WEEKS)	COURSE STARTS	EXAM DATE	URL
1.	noc22-cs02	Artificial Intelligence: Knowledge Representation And Reasoning	12 Weeks	January 24, 2022	April 15, 2022	<a href="https://onlinecourses.nptel.ac.in/noc22_cs02/preview">https://onlinecourses.nptel.ac.in/noc22_cs02/preview</a>
2.	noc22-cs03	Foundations of Cryptography	12 Weeks	January 24, 2022	April 15, 2022	<a href="https://onlinecourses.nptel.ac.in/noc22_cs03/preview">https://onlinecourses.nptel.ac.in/noc22_cs03/preview</a>
3.	noc22-cs04	Discrete Mathematics - IITB	12 Weeks	January 24, 2022	April 15, 2022	<a href="https://onlinecourses.nptel.ac.in/noc22_cs04/preview">https://onlinecourses.nptel.ac.in/noc22_cs04/preview</a>
4.	noc22-cs06	AI:Constraint Satisfaction	8 Weeks	January 24, 2022	March 18, 2022	<a href="https://onlinecourses.nptel.ac.in/noc22_cs06/preview">https://onlinecourses.nptel.ac.in/noc22_cs06/preview</a>
5.	noc22-cs08	Data Analytics with Python	12 Weeks	January 24, 2022	April 15, 2022	<a href="https://onlinecourses.nptel.ac.in/noc22_cs08/preview">https://onlinecourses.nptel.ac.in/noc22_cs08/preview</a>
6.	noc22-cs09	GPU Architectures and Programming	12 Weeks	January 24, 2022	April 15, 2022	<a href="https://onlinecourses.nptel.ac.in/noc22_cs09/preview">https://onlinecourses.nptel.ac.in/noc22_cs09/preview</a>
7.	noc22-cs10	Advanced Computer Architecture	8 Weeks	February 21, 2022	April 15, 2022	<a href="https://onlinecourses.nptel.ac.in/noc22_cs10/preview">https://onlinecourses.nptel.ac.in/noc22_cs10/preview</a>
8.	noc22-cs11	Data Mining	8 Weeks	February 21, 2022	April 15, 2022	<a href="https://onlinecourses.nptel.ac.in/noc22_cs11/preview">https://onlinecourses.nptel.ac.in/noc22_cs11/preview</a>
9.	noc22-cs13	Ethical Hacking	12 Weeks	January 24, 2022	April 15, 2022	<a href="https://onlinecourses.nptel.ac.in/noc22_cs13/preview">https://onlinecourses.nptel.ac.in/noc22_cs13/preview</a>
10.	noc22-cs16	User-centric Computing for Human-Computer Interaction	8 Weeks	January 24, 2022	March 18, 2022	<a href="https://onlinecourses.nptel.ac.in/noc22_cs16/preview">https://onlinecourses.nptel.ac.in/noc22_cs16/preview</a>
11.	noc22-cs17	Advanced Graph Theory	8 Weeks	February 21, 2022	April 15, 2022	<a href="https://onlinecourses.nptel.ac.in/noc22_cs17/preview">https://onlinecourses.nptel.ac.in/noc22_cs17/preview</a>
12.	noc22-cs18	Cloud Computing and Distributed Systems	8 Weeks	January 24, 2022	March 18, 2022	<a href="https://onlinecourses.nptel.ac.in/noc22_cs18/preview">https://onlinecourses.nptel.ac.in/noc22_cs18/preview</a>
13.	noc22-cs19	Computer Networks and Internet Protocol	12 Weeks	January 24, 2022	April 15, 2022	<a href="https://onlinecourses.nptel.ac.in/noc22_cs19/preview">https://onlinecourses.nptel.ac.in/noc22_cs19/preview</a>



S.NO	COURSE CODE	COURSE NAME	DURATION (WEEKS)	COURSE STARTS	EXAM DATE	URL
14.	noc22-cs21	Introduction to parallel programming with OpenMP and MPI	4 Weeks + 4 Weeks(New)	January 24, 2022	March 18, 2022	<a href="https://onlinecourses.nptel.ac.in/noc22_cs21/preview">https://onlinecourses.nptel.ac.in/noc22_cs21/preview</a>
15.	noc22-cs22	Deep Learning	12 Weeks	January 24, 2022	April 15, 2022	<a href="https://onlinecourses.nptel.ac.in/noc22_cs22/preview">https://onlinecourses.nptel.ac.in/noc22_cs22/preview</a>
16.	noc22-cs23	Information Security - 5 - Secure Systems Engineering	8 Weeks	January 24, 2022	March 18, 2022	<a href="https://onlinecourses.nptel.ac.in/noc22_cs23/preview">https://onlinecourses.nptel.ac.in/noc22_cs23/preview</a>
17.	noc22-cs24	Machine Learning, ML	8 Weeks	February 21, 2022	April 15, 2022	<a href="https://onlinecourses.nptel.ac.in/noc22_cs24/preview">https://onlinecourses.nptel.ac.in/noc22_cs24/preview</a>
18.	noc22-cs25	Model Checking	12 Weeks	January 24, 2022	April 15, 2022	<a href="https://onlinecourses.nptel.ac.in/noc22_cs25/preview">https://onlinecourses.nptel.ac.in/noc22_cs25/preview</a>
19.	noc22-cs26	Programming, Data Structures And Algorithms Using Python	8 Weeks	January 24, 2022	March 18, 2022	<a href="https://onlinecourses.nptel.ac.in/noc22_cs26/preview">https://onlinecourses.nptel.ac.in/noc22_cs26/preview</a>
20.	noc22-cs28	Data Science for Engineers	8 Weeks	January 24, 2022	March 18, 2022	<a href="https://onlinecourses.nptel.ac.in/noc22_cs28/preview">https://onlinecourses.nptel.ac.in/noc22_cs28/preview</a>
21.	noc22-cs29	Introduction to Machine Learning	12 Weeks	January 24, 2022	April 15, 2022	<a href="https://onlinecourses.nptel.ac.in/noc22_cs29/preview">https://onlinecourses.nptel.ac.in/noc22_cs29/preview</a>
22.	noc22-cs30	Social Networks	12 Weeks	January 24, 2022	April 15, 2022	<a href="https://onlinecourses.nptel.ac.in/noc22_cs30/preview">https://onlinecourses.nptel.ac.in/noc22_cs30/preview</a>
23.	noc22-cs31	The Joy of Computing using Python	12 Weeks	January 24, 2022	April 15, 2022	<a href="https://onlinecourses.nptel.ac.in/noc22_cs31/preview">https://onlinecourses.nptel.ac.in/noc22_cs31/preview</a>
24.	noc22-cs33	Discrete Mathematics	12 Weeks	January 24, 2022	April 15, 2022	<a href="https://onlinecourses.nptel.ac.in/noc22_cs33/preview">https://onlinecourses.nptel.ac.in/noc22_cs33/preview</a>
25.	noc22-cs34	Reinforcement Learning	12 Weeks	January 24, 2022	April 15, 2022	<a href="https://onlinecourses.nptel.ac.in/noc22_cs34/preview">https://onlinecourses.nptel.ac.in/noc22_cs34/preview</a>
26.	noc22-cs35	Deep Learning - IIT Ropar	12 Weeks	January 24, 2022	April 15, 2022	<a href="https://onlinecourses.nptel.ac.in/noc22_cs35/preview">https://onlinecourses.nptel.ac.in/noc22_cs35/preview</a>

S.NO	COURSE CODE	COURSE NAME	DURATION (WEEKS)	COURSE STARTS	EXAM DATE	URL
27	noc22-cs37	Online Privacy	12 Weeks	January 24, 2022	April 15, 2022	<a href="https://onlinecourses.nptel.ac.in/noc22_cs37/preview">https://onlinecourses.nptel.ac.in/noc22_cs37/preview</a>
28	noc22-cs38	Design and Engineering of Computer Systems	8 Weeks	January 24, 2022	March 18, 2022	<a href="https://onlinecourses.nptel.ac.in/noc22_cs38/preview">https://onlinecourses.nptel.ac.in/noc22_cs38/preview</a>
30	noc22-cs41	Computational Geometry	12 Weeks	January 24, 2022	April 15, 2022	<a href="https://onlinecourses.nptel.ac.in/noc22_cs41/preview">https://onlinecourses.nptel.ac.in/noc22_cs41/preview</a>
31	noc22-cs42	An Introduction to Programming Through C++	12 Weeks	January 24, 2022	April 15, 2022	<a href="https://onlinecourses.nptel.ac.in/noc22_cs42/preview">https://onlinecourses.nptel.ac.in/noc22_cs42/preview</a>
32	noc22-cs43	Programming in Modern C++	12 Weeks	January 24, 2022	April 15, 2022	<a href="https://onlinecourses.nptel.ac.in/noc22_cs43/preview">https://onlinecourses.nptel.ac.in/noc22_cs43/preview</a>
33	noc22-cs44	Blockchain and its Applications	12 Weeks	January 24, 2022	April 15, 2022	<a href="https://onlinecourses.nptel.ac.in/noc22_cs44/preview">https://onlinecourses.nptel.ac.in/noc22_cs44/preview</a>
34	noc22-cs45	Problem Solving Through Programming In C	12 Weeks	January 24, 2022	April 15, 2022	<a href="https://onlinecourses.nptel.ac.in/noc22_cs45/preview">https://onlinecourses.nptel.ac.in/noc22_cs45/preview</a>
35	noc22-cs46	Embedded Systems Design	12 Weeks	January 24, 2022	April 15, 2022	<a href="https://onlinecourses.nptel.ac.in/noc22_cs46/preview">https://onlinecourses.nptel.ac.in/noc22_cs46/preview</a>
36	noc22-cs48	Hardware Security	12 Weeks	January 24, 2022	April 15, 2022	<a href="https://onlinecourses.nptel.ac.in/noc22_cs48/preview">https://onlinecourses.nptel.ac.in/noc22_cs48/preview</a>
37	noc22-cs49	Discrete Structures	12 Weeks	January 24, 2022	April 15, 2022	<a href="https://onlinecourses.nptel.ac.in/noc22_cs49/preview">https://onlinecourses.nptel.ac.in/noc22_cs49/preview</a>
38	noc22-cs50	VLSI Physical Design	12 Weeks	January 24, 2022	April 15, 2022	<a href="https://onlinecourses.nptel.ac.in/noc22_cs50/preview">https://onlinecourses.nptel.ac.in/noc22_cs50/preview</a>
39	noc22-cs52	Introduction To Industry 4.0 And Industrial Internet Of Things	12 Weeks	January 24, 2022	April 15, 2022	<a href="https://onlinecourses.nptel.ac.in/noc22_cs52/preview">https://onlinecourses.nptel.ac.in/noc22_cs52/preview</a>
40	noc22-cs53	Introduction To Internet Of Things	12 Weeks	January 24, 2022	April 15, 2022	<a href="https://onlinecourses.nptel.ac.in/noc22_cs53/preview">https://onlinecourses.nptel.ac.in/noc22_cs53/preview</a>
41	noc22-cs54	Introduction To Soft Computing	8 Weeks	January 24, 2022	March 18, 2022	<a href="https://onlinecourses.nptel.ac.in/noc22_cs54/preview">https://onlinecourses.nptel.ac.in/noc22_cs54/preview</a>



S.NO	COURSE CODE	COURSE NAME	DURATION (WEEKS)	COURSE STARTS	EXAM DATE	URL
42	noc22-cs55	Object Oriented System Development Using UML, Java And Patterns	12 Weeks	January 24, 2022	April 15, 2022	<a href="https://onlinecourses.nptel.ac.in/noc22_cs55/preview">https://onlinecourses.nptel.ac.in/noc22_cs55/preview</a>
43	noc22-cs56	An Introduction to Artificial Intelligence	12 Weeks	January 24, 2022	April 15, 2022	<a href="https://onlinecourses.nptel.ac.in/noc22_cs56/preview">https://onlinecourses.nptel.ac.in/noc22_cs56/preview</a>
44	noc22-cs57	Introduction to Database Systems	12 Weeks	January 24, 2022	April 15, 2022	<a href="https://onlinecourses.nptel.ac.in/noc22_cs57/preview">https://onlinecourses.nptel.ac.in/noc22_cs57/preview</a>
45	noc22-cs59	Getting Started with Competitive Programming	12 Weeks	January 24, 2022	April 15, 2022	<a href="https://onlinecourses.nptel.ac.in/noc22_cs59/preview">https://onlinecourses.nptel.ac.in/noc22_cs59/preview</a>
46	noc22-cs60	Arithmetic Circuit Complexity	12 Weeks	January 24, 2022	April 15, 2022	<a href="https://onlinecourses.nptel.ac.in/noc22_cs60/preview">https://onlinecourses.nptel.ac.in/noc22_cs60/preview</a>