

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

Accredited by NBA | AICTE Sponsored Margdarshan Mentor Institution  
DST-FIST Supported Institution | ISO 9001:2015 Certified  
Recognized under Section 2(f) & 12(B) of the UGC Act, 1956

[/fxangq](#) [/fxengq](#) [/fx\\_ec](#) [/fxengq](#)  
[/francisxavierengineeringcollege](#)

Department of Master of Computer Application

**Tenth Board Of Studies Meeting**

**Department of MCA**

**Francis Xavier Engineering College, Vannarpettai,**

**Tirunelveli - 627 003**

**(An Autonomous Institution - Affiliated to Anna University, Chennai)**

**[www.francisxavier.ac.in](http://www.francisxavier.ac.in)**



*D. Angeli*  
12/12/2023



## 10<sup>th</sup> Board of Studies Meeting in the Department of MCA

### AGENDA

BoS / MCA 10.1: Welcome address and Opening Remarks by Chairman of Computer Science Department on behalf of Board of studies in the Department of MCA

BoS / MCA 10.2: Confirmation of the Minutes of the 9<sup>th</sup> meeting of Board of studies in the Department of MCA held on 12.12.2023 and Action taken report of 9<sup>th</sup> meeting of Board of studies

BoS / MCA 10.3: Business brought forward by the Chairman, Board of Studies

10.3.1 Inclusion of Vertical "Full Stack Development"

10.3.2 MCA Curriculum and Syllabus PG 2021 under R2021

10.3.3 Outcome of R2021

- Industrial Training/Internship/Credit Transfer
- Industry Supported Courses
- Online Course for Credit Transfer
- Skill based Value added Courses
- Project Work in Industry
- New Lab Requirements/Lab upgradation
- NPTEL Course List Approval

10.3.4 Plan for PG2024 Regulation

BoS / MCA 10.4: Suggestions given by the BOS Members

BoS / MCA 10.5: Any other items for discussion



*D. Jeyaraj*  
12/12/2023



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

Accredited by NBA | AICTE Sponsored Management Mentor Institution  
 DST-FIST Supported Institution | ISO 9001:2015 Certified  
 Recognized under Section 2(f) & 12(B) of the UGC Act, 1956

[/fxengg](#) [/fxengg](#) [/fx\\_ac](#) [/fxengg](#)  
[/francisxavierengineeringcollege](#)

**Department of Master of Computer Application**  
**MINUTES OF THE MEETING**

The 10<sup>th</sup> Meeting of the Board of studies of the MCA Department was held on 12.12.2023 @

9.30 am through blended mode:

Meeting Link: 10th BOS MEETING

Tuesday, December 12 · 9:30am – 3:00pm

Time zone: Asia/Kolkata

Google Meet joining info

Video call link: <https://meet.google.com/frw-kxjy-eaj>

Or dial: (US) +1 650-817-8090 PIN: 787 171 685#



**GPS Map Camera**

Tirunelveli, Tamil Nadu, India  
 Andivj, kodaikanal, Barani Nagar, Tirunelveli, Tamil Nadu 627003, India  
 Lat 8.731444°  
 Long 77.723469°  
 12/12/23 12:03 PM GMT +05:30

Google



The following members were present:

10<sup>th</sup> Board of Studies Meeting Minutes, Department of Computer Applications

*Dangy*  
 12/12/2023  
 3/12



**Department of Master of Computer Application**

1. Mr. G. Aravind Swaminathan, Prof & Head, CSE,BoS Chairman
2. Mrs. D. Angeline Ranjithamani, AP & Head MCA Department
3. Dr. C. Senthil Kumar, Asso. Prof/CSE,TCE,Anna University Nominee
4. Dr. E. Ilavarasan, Prof./CSE,PEC, Other University Nominee
5. Dr. D. Murugan, Prof./CSE, MS University, Other University Nominee
6. Mr.Prabagar Ramamurthy,Head,Information Security Management,Tata Consultancy Services, Industry Expert
7. Mr.Abishek Stephen,Senior Backend Engineer,Turing,Palo Alto, California,USA,Alumni Expert
8. Mr. A. Arul Amalraj, AP / MCA
9. Mrs. G. Durgaveni, AP/MCA
10. Mrs. K. Dhamayanthi,AP/MCA
11. Mrs. M.K. Subbulakshmi,AP/MCA
12. Mrs. J. Anciline Jenifer,AP/MCA
13. Mrs. S. Irudhaya Ananthi,AP/MCA
14. Mrs. Annie Rose Nirmala, HOD/MBA
15. Mr. A. Santiago Stephen, AP/MATHS
16. Mrs. Shala F John, AP/ENGLISH

**BoS / MCA 10.1: WELCOME ADDRESS AND OPENING REMARKS BY CHAIRMAN, BOARD OF STUDIES OF COMPUTER SCIENCE DEPARTMENT ON BEHALF OF DEPARTMENT OF MCA**

The Chairman, BOS of the MCA Department welcomed and introduced the members of 10<sup>th</sup> Board of Studies and thanked each of them for sparing their valuable time to attend the meeting.

**BoS / MCA 10.2: TO CONFIRM THE MINUTES OF NINTH BOS MEETING HELD ON 12.06.2023**

The minutes of the Ninth Board of Studies meeting held on 12.06.2023 were communicated to the members. The comments received have been incorporated and placed for confirmation. The same was approved by the 9<sup>th</sup> Academic Council.

(Annexure I: Action Taken Report)

**BoS / MCA 10.3.1: TO CONFIRM AND APPROVE the Inclusion of Vertical Full Stack Development**



*Durgam*  
12/12/2024



**Department of Master of Computer Application**

- ✓ RESOLVED TO APPROVE the syllabus for Principles of Programming Languages, UI and UX Design and Fundamentals in Backend Engineering, Credit distribution, CO – PO mapping, Course Outcomes, Weightage of syllabus (Annexure – II)

BoS / MCA 10.3.2: TO CONFIRM AND APPROVE the 2021 MCA Curriculum for Regulation 2021

- ✓ RESOLVED TO APPROVE the syllabus for the 2021 MCA Curriculum for Regulation 2021, Credit distribution, CO – PO mapping, Course Outcomes, Weightage of syllabus

BoS / MCA 10.3.3: TO CONFIRM AND APPROVE the Outcome of R2021

- ✓ RESOLVED TO APPROVE the Outcome of R2021 for Industrial Training/ Internship/ Credit Transfer, Industry Supported Courses, Online Course for Credit Transfer, Skill based Value added Courses, Project Work in Industry, New Lab Requirements and Lab upgradation

BoS / MCA 10.3.4: TO CONFIRM AND APPROVE the newly added NPTEL Courses

- ✓ RESOLVED TO APPROVE the syllabus Credit distribution, CO – PO mapping, Course Outcomes, Weightage of syllabus (Annexure – III)

BoS / MCA 10.4 : Suggestions Given by the Members

- ✓ Vertical name for Advanced Networking can be refined as Advanced Networking and Web Security as the courses 21CA3202: Block Chain and its applications and 21CA3213 : Cyber Laws and IT Acts dealt with security issues
- ✓ 21CA3203: Cyber Security and Forensics can be moved to Advanced Networking
- ✓ Vertical name for Data Science can be refined as Artificial Intelligence and Data Science
- ✓ The course 21CA3216 : DevOps can be included in the course 21CA2208: Principles of Programming Languages and Fundamentals of Backend Engineering can be added instead of DevOps

BoS / MCA 10.5: Any other items for discussion

- ✓ Suggestions given to include software that dealt with Testing and Vulnerability assessment in the budget.

The members had a brainstorming discussion, deliberation and interaction among themselves. After discussion, productive suggestions were incorporated appropriately in the 2021 MCA Curriculum and Syllabi.

Based on the suggestions given by the members, BOS resolved to recommend the following to the Academic Council for further approval.



*[Handwritten Signature]*  
 12/11/2022  
 5/12



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

Accredited by NBA | AICTE Sponsored Margdarshan Mentor Institution  
DBT-FIST Supported Institution | ISO 9001:2015 Certified  
Recognized under Section 2(f) & 12(B) of the UGC Act, 1956

[/fxangg](#) [/fxangg](#) [/fx\\_nc](#) [/fxangg](#)  
[/francixavierengineeringcollege](#)

## Department of Master of Computer Application

1. Incorporation of NPTEL courses, Credit distribution, CO - PO mapping, Course Outcomes, Weightage of syllabus
2. Incorporation of New courses, Credit distribution, CO - PO mapping, Course Outcomes, Weightage of syllabus

Dr. Aravind Swaminathan, Board Chairman thanked all the members for their kind cooperation and the meeting came to an end.

### Attendance Sheet

#### External Members:

S. No.	Name	Signature
1	Dr. C. Senthil Kumar, Asso. Prof/CSE Thiyagarajar College of Engineering, Anna University Nominee	
2	Dr. E. Ilavarasan, Prof./CSE, Pondicherry Engineering College Other University Nominee	
3	Dr. D. Murugan, Prof./CSE Manonmaniam Sundaranar University Other University Nominee	
4	Mr. Prabagar Ramamurthy Head, Information Security Management, Tata Consultancy Services, Industry Expert	
5	Mr. Abishek Stephen Senior Backend Engineer, Turing, Palo Alto, California, USA Alumni Expert	 12/12/23



6/12



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

Aaccredited by NBA | AICTE Sponsored Meritdharshan Meritor Institution  
 DUT-FIST Supported Institution | ISO 9001:2015 Certified  
 Recognized under Section 2(f) & 12(D) of the UGC Act. 1950

1/xengg 2/xengg 3/x\_ec 4/xengg  
 5/francisxavierengineeringcollege

**Department of Master of Computer Application**

**Internal Members Present:**

S. No.	Name of the Internal Members	Signature
1	Dr. Aravind Swaminathan, HOD/CSE	G. Aravind 12/12/23
2	Mrs. D. Angeline Ranjithamani, AP & HOD/MCA	D. Angeline 12/12/23
3	Mr. A. Arul Amalraj, AP / MCA	A. Arul Amalraj 12/12/2023
4	Mrs. G. Durgaveni, AP/MCA	G. Durgaveni 12/12/23
5	Mrs. K. Dhamayanthi, AP/MCA	K. Dhamayanthi 12/12/23
6	Mrs. M. K. Subbulakshmi, AP/MCA	M. K. Subbulakshmi 12/12/23
7	Mrs. J. Anciline Jenifer, AP/MCA	J. Anciline Jenifer 12/12/23
8	Mrs. S. Irudhaya Ananthi, AP/MCA	S. Irudhaya Ananthi 12/12/2023
9	Mrs. Annie Rose Nirmala, HOD/MBA	A. Rose Nirmala 12.12.23
10	Mr. A. Santiago Stephen, AP/MATHS	A. Santiago Stephen 12.12.23
11	Mrs. Shala F John, AP/ENGLISH	S. F. John 12/12/23

G. Aravind  
 12/12/2023  
 CHAIRMAN  
 BOARD OF STUDIES



D. Angeline  
 7/12/12/2023



## Annexure 1

### Ninth of Studies Meeting Action Taken Report

The following are the suggestions given by the Members of the Board of Studies to incorporate in the curriculum and syllabi

#### Suggestions

- 21MA1258 – Mathematical foundations of Computer Applications, topics like K-Map can be added
- 21CA1101 – Data Structures, LeetCode can be included in Web resources
- 21CA1103 – Operating system, case studies like Windows 11, Linux can be incorporated
- 21CA1105 – Web Front End Essentials, topics like CSS Flexbox (Flexible Box) and JQuery deferred and promise need to added
- 21CA1913 – Communication and soft skill laboratory , Email etiquette can be taught to the students
- 21CA2101 – Programming with Java, Latest version can be used for laboratories so that the students can learn lambda features in java
- 21CA2104 – Web Application Development Framework, Latest version can be used in Hibernate, MongoDB not needed
- 21CA3102 – Mobile Application Development Kotlin can be incorporated to interoperate fully with Java, and the JVM version of Kotlin's standard library depends on the Java Class Library
- 21CA3913 – Miniproject, Open source software Postman can be used to design, build, test and iterate the APIs
- 21CA2205 – Real time Embedded System, Heat distribution can be taught to the students effectively
- 21CA2206 – Software Project Management topics like Risk management can be included
- 21CA3201 – Ecommerce and Business Intelligence, include Product Market Fit as an additional topic
- 21CA3204 – Adhoc and sensor networks, Error detection mechanism can be incorporated
- 21CA3210 – Enterprise Resource planning, Financial Management and Logistic management topics can be added
- 21CA2B01 – Database Management Systems, contents for FAT 32, NTFS can be added
- 21CA2B02 – Object Oriented Programming using C++ topics like Solid Principles can be added

10<sup>th</sup> Board of Studies Meeting Minutes,



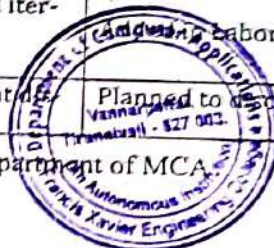
8/12





Action Taken

S.No	Recommendations from Expert Members	Amendments incorporated and approved by 9 <sup>th</sup> Academic Council meeting dated on 15.07.2023
1	21MA1258 - Mathematical foundations of Computer Applications, topics like K-Map can be added: Page No. 13	Updated :Page No:13 Added in Unit 3
2	21CA1101 - Data Structures, LeetCode can be included in Web resources: : Page No. 17	Updated :Page No. 17 Added in Web Resources
3	21CA1103 - Operating system, case studies like Windows 11, Linux can be incorporated Page No. 21	Updated : Page No. 21 Added in Unit 5
4	21CA1105 - Web Front End Essentials, topics like CSS Flexbox (Flexible Box) and jquery deferred and promise need to added: Page No. 25 & 26	Updated : Page No : 25 & 26 Added in Unit 2 & Added in Unit 5
5	21CA1913 - Communication and soft skill laboratory , Email etiquette can be taught to the students: Page No :35	Updated : Page No :35 Added in Module 1
6	21CA2101 - Programming with Java, Latest version can be used for laboratories so that the students can learn lambda features in java: Page No : 43	Updated : Page No : 43 Added in Unit 1
7	21CA2104 - Web Application Development Framework, Latest version can be used in Hibernate, MongoDB not needed: Page No : 53	Updated : Page No : 55 Removed in Laboratory Requirements
8	21CA3111 - Mobile Application Development Kotlin can be incorporated to Interoperate fully with Java, and the JVM version of Kotlin's standard library depends on the Java Class Library : Page No : 83	Updated : Page No : 83 Added in Laboratory Requirements
9	21CA3913 - Miniproject, Open source software Postman can be used to design, build, test and iterate the APIs: Page No : 86	Updated : Page No : 86 Laboratory Requirements
10	21CA2205 - Real time Embedded System, Heat	Planned to discuss in Unit 5 9/12



*[Handwritten signature]*  
9/12



**Department of Master of Computer Application**

	tribution can be taught to the students effectively	
11	21CA2206 – Software Project Management topics like Risk management can be included: Page No : 130	Updated : Page No : 130 Added in Unit 5
12	21CA3201 – Ecommerce and Business Intelligence, include Product Market Fit as an additional topic: Page No :135	Updated : Page No :135 Added in Unit 5
13	21CA3204 – Adhoc and sensor networks, Error detection mechanism can be incorporated: Page No :142	Updated : Page No : 142 Added in Unit 3
14	21CA3210 – Enterprise Resource planning, Financial Management and Logistic management topics can be added: Page No :156	Updated : Page No : 156 Added in Unit 2 & Unit 3
15	21CA2B01 – Database Management Systems, contents for FAT 32, NTFS can be added: Page No : 178	Updated : Page No : 178 Added in Unit 4



*D. Jeyaraj*  
 12/12/23  
 10/12



Annexure II

List of Electives Included

S. No	Course Code	Course Name	Cat ego ry	Contact Periods	L	T	P	C
Practical Courses								
1	21CA2208	Principles of Programming Lan- guages	PE	3	3	0	0	3
2	21CA3215	UI & UX Design	PE	3	3	0	0	3
3	21CA3216	Fundamentals in Backend Engi- neering	PE	3	3	0	0	3



*Angela J. J. J.*



Annexure II

List of Electives Included

S. No	Course Code	Course Name	Cat e go ry	Contact Periods	L	T	P	C
Practical Courses								
1	21CA2208	Principles of Programming Lan- guages	PE	3	3	0	0	3
2	21CA3215	UI & UX Design	PE	3	3	0	0	3
3	21CA3216	Fundamentals in Backend Engi- neering	PE	3	3	0	0	3



*Angela*  
*12/10/2022*



**Department of Master of Computer Application**

**Annexure III**

**Newly Added NPTEL Courses**

S.No	Course ID	Course Name	Duration
1	noc24-cs01	Foundations of Cryptography	12 Weeks
2	noc24-cs08	An Introduction to Artificial Intelligence	12 Weeks
3	noc24-cs15	Block Chain and its Applications	12 Weeks
4	noc24-cs17	Cloud Computing	12 Weeks
5	noc24-cs19	Computer Networks And Internet Protocol	12 Weeks
6	noc24-cs20	Data Analytics with Python	12 Weeks
7	noc24-cs25	Embedded Systems Design	12 Weeks
8	noc24-cs33	Introduction to Embedded System Design	12 Weeks
9	noc24-cs35	Introduction To Internet Of Things	12 Weeks
10	noc24-cs38	Machine Learning for Engineering and science applications	12 Weeks
11	noc24-cs39	Natural Language Processing	12 Weeks
12	noc24-cs40	Object Oriented System Development Using UML, Java And Patterns	12 Weeks
13	noc24-cs42	Problem Solving Through Programming In C	12 Weeks
14	noc24-cs43	Programming In Java	12 Weeks
15	noc24-cs44	Programming in Modern C++	12 Weeks
16	noc24-cs51	Introduction to Machine Learning	12 Weeks
17	noc24-cs55	Introduction to Database Systems	12 Weeks
18	noc24-cs57	The Joy of Computing using Python	12 Weeks
19	noc24-cs59	Deep Learning - IIT Ropar	12 Weeks
20	noc24-cs64	Games and Information	12 weeks
21	noc24-cs65	Business Intelligence & Analytics	12 Weeks



*Handwritten signature and date: 12/12/2023*