



Faculty of Computing and Information Technology

Minutes of meeting of Board of studies held on 3rd June 2022

Ref. UMU/FCIT/2022/01

Date: 03/06/2022

A meeting of the members of Board of Studies (BoS) of the Faculty of Computing & Information Technology was held on 03-06-2022 at 11.00 am to review the course curriculum of **MCA program** to be effective from 2022-23 AY.

The following members were present:

1. Dr.Sharmistha Roy Chairperson
2. Dr. Kumar Rajnish- External Academic Expert
3. All internal faculty members of the department present on that day

The chairperson of the Board of Studies (BoS) welcomed all of the members and thanked the external expert for his time. The items were covered according to the agenda.

Item No. 1: To confirm the minutes of the meeting of the Board of Studies held on 26th June 2021.

The members of BoS confirmed the minutes.

(Annexure-1)

Item No. 2: To report the action taken on the minutes of Board of Studies held on 26th June 2021.

The members of Board of Studies noted the action taken on the decision on the previous meeting and expressed its appreciation for the efforts.

(Annexure-2)

Item No. 3: To consider and adopt the syllabus of New Elective courses to be offered from 2022-23 AY.

The new elective courses offered in MCA w.e.f 2022-23 AY are as follows:

Elective Course Code (EC)	Course Title
MCA-ECA312	Deep Learning
MCA-ECB302	Windows Programming With Visual Basic.Net
MCA-EPB302	Windows Programming With Visual Basic.Net Lab

The detailed course curriculum / syllabus of the courses are attached in Annexure 3.

(Annexure 3)

Item No. 4: To consider and adopt the revision of courses offered in MCA program to be effective from 2022-23 AY.

Revision of courses in 2nd year of MCA program to be effective in 2022-23 AY

The members of BoS recommended the following changes in Elective courses as mentioned below.

Revision in Elective course curriculum of 2nd year of MCA w.e.f 2022-23 AY	
Course Code & Name	Module/ Topics (Added/ Deleted)
3rd semester <u>Course Name & Code:</u> Compiler Design (MCA-ECA302)	<u>Modules/ Units Added :</u> Unit I. Overview of Compilation: Introduction to Compiler, Phases of Compilation, Grouping of Phases. Unit II. Lexical Analysis & Syntax Analysis: Role of Lexical Analyzer, Input Buffering, Specification of Tokens, Finite state machines and regular expressions and their applications to lexical analysis. Context-free grammars, Top-down Parsing – Backtracking, LL(1), recursive descent parsing, Predictive parsing, Bottom-up parsing – Shift Reduce parsing, LR and LALR parsing, Error recovery in parsing, handling ambiguous grammar. Unit III. Semantic analysis: Intermediate forms of source Programs – abstract syntax tree, polish notation and three address codes. Attributed grammars, Syntax directed translation, Conversion of popular Programming languages language Constructs into Intermediate code forms, Type checker. Unit IV. Symbol Tables & Code Optimization: Symbol table format, organization for block structures languages, hashing, tree structures representation of scope information. Consideration for Optimization, Scope of Optimization, local optimization, loop optimization, frequency reduction, folding, DAG representation. Unit V. Data flow analysis & Object code generation: Flow graph, data flow equation, global optimization, redundant sub expression elimination, Induction variable elements, Live variable analysis, Copy propagation. Object code forms, machine dependent code optimization, register allocation and assignment generic code generation algorithms, DAG for register allocation.



	<p>Text Book 1. Compilers- Principles, Techniques and Tools, By A.V. Aho, M.S. Lam, R Sethi and J.D.Ullman, Pearson Education.</p> <p>Reference Book 1. lex &yacc – John R. Levine, Tony Mason, Doug Brown, O'reilly 2. Engineering a Compiler, by Cooper & Linda, Elsevier. 3. Compiler Construction, K.C. Louden, Thomson Brooks/Cole.</p>
<p>3rd semester <u>Course Name & Code:</u> Internet of Things (MCA-ECA309)</p>	<p>Unit I. Introduction to IoT: Sensing, Actuation, Networking basics, Communication Protocols, Sensor Networks, Machine-to-Machine Communications, IoT Definition, Characteristics. IoT Functional Blocks, Physical design of IoT, Logical design of IoT, Communication models & APIs.</p> <p>Unit II. M2M to IoT The Vision-Introduction, From M2M to IoT, M2M towards IoT-the global context, A use case example, Differing Characteristics. Definitions, M2M Value Chains, IoT Value Chains, An emerging industrial structure for IoT.</p> <p>Unit III. M2M vs IoT an Architectural Overview Building architecture, Main design principles and needed capabilities, An IoT architecture outline, standards considerations. Reference Architecture and Reference Model of IoT.</p> <p>Unit IV. IoT Reference Architecture Getting Familiar with IoT Architecture, Various architectural views of IoT such as Functional, Information, Operational and Deployment. Constraints affecting design in IoT world- Introduction, Technical design Constraints.</p> <p>Domain specific applications of IoT: Home automation, Industry applications, Surveillance applications, Other IoT application.</p> <p>Unit V. Developing IoT solutions Introduction to Python, Introduction to different IoT tools, Introduction to Arduino and Raspberry Pi Implementation of IoT with Arduino and Raspberry, Cloud Computing, Fog Computing, Connected Vehicles, Data Aggregation for the IoT in Smart Cities, Privacy and Security Issues in IoT.</p>



	<p>Text Book:</p> <p>1) Vijay Madiseti and ArshdeepBahga, “Internet of Things (A Hands-onApproach)”, 1st Edition, VPT, 2014.</p> <p>References Books:</p> <p>1) SudipMisra, AnandarupMukherjee, Introduction to IoT, Cambridge University Press, 2022</p> <p>2) Rashmi Nanda, IoT and Smart Cities: Your smart city planning guide, BPB Publications, 2022</p> <p>3) Francis daCosta, “Rethinking the Internet of Things: A Scalable Approach to Connecting Everything”, 1st Edition, Apress Publications, 2013.</p> <p>4) Jan Holler, VlasiosTsiatsis, Catherine Mulligan, Stefan Avesand, Stamatis Karnouskos, David Boyle, “From Machine-to-Machine to the Internet of Things: Introduction to a New Age of Intelligence”, 1st Edition, Academic Press, 2014.</p> <p>5) CunoPfister, Getting Started with the Internet of Things, OReilly Media, 2021, ISBN: 978-1-4493- 9357-1.</p>
--	---

Revision of courses in 1st year of MCA program to be effective in 2022-23 AY

The members of BoS recommended the following changes in Core course as mentioned below.

Revision in Core course curriculum of 1st year of MCA w.e.f 2022-23 AY	
Course Code & Name	Module/ Topics (Added/ Deleted)
<p>2nd semester</p> <p><u>Course Name & Code:</u> Data Communication and Computer Networks (MCA-CC205)</p>	<p><u>Modules Added :</u></p> <p>Unit IV. Network Layer Introduction to leased lines, DSL, Bridging & Routing: Types of Routing, static & Dynamic Routing, IP addressing concepts: IPV4 & IPV6, ICMP, ARP, RARP, Congestion Control, Introduction to data security and Cryptography, private key, public key, ISO standards). Introduction to Mobile technology (Topology, FDM, TDM, CDMA), satellite communication (LEO, GEO, MEO).</p> <p>Unit V. Transport and Application Layer The Transport Service, Elements of Transport Protocols, Congestion Control, The Internet Transport Protocol: UDP, The Internet Transport Protocols – TCP. DNS: Domain Name Space, Domain Resource Records, Domain Name Servers. Electronic mail: SMTP, The World Wide Web: Static and dynamic web pages, web applications, HTTP, mobile web. Streaming audio and Video: Digital audio and video, streaming stored and live media, Content delivery: Content and internet traffic, content delivery networks, peer-to-peer networks.</p>

Item No. 5: To consider the implement the input the qualitative initiative as per the directions of IQAC.

The BoS members recommended adopting the quality initiatives suggested by IQAC.

Item No. 6: To consider and implement the input recommended by Academic forum.

The members of BoS recommended adopting the input recommend by academic forum.

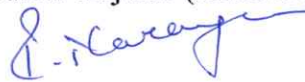
The external academic expert of BoS authorized the other person of BoS for any kind of revision/change if needed.

The meeting is ended with thanks to all the members.

Date: 03-06-2022

Members Present with Signature:

1. Dr. Sharmistha Roy (Chairperson)
2. Dr. Kumar Rajnish (External Academic Expert)



Chairperson
Head
Computing & IT,
UMU, Angara, Ranchi-835103

Copy To:

Vice Chancellor, UMU for kind information
Registrar, UMU for kind information
All members of the BOS



Faculty of Computing and Information Technology

Minutes of meeting of Board of studies held on 26th June 2021

Ref. UMU/FCIT/2021/02

Date: 26/06/2021

A meeting of the members of the Board of Studies (BoS) of the Faculty of Computing & Information Technology was held on 26-06-2021 at 1.00 pm to review the course curriculum of **MCA program** to be effective from 2021-22 AY.

Google Meet Link: <https://meet.google.com/sbf-uyfv-aii>

The following members were present:

- | | |
|---|--------------------------|
| 1. Dr. Sharmistha Roy | Chairperson |
| 2. Dr. Kumar Rajnish- | External Academic Expert |
| 3. All internal faculty members of the department present on that day | |

The chairperson of the Board of Studies (BoS) welcomed all of the members and thanked the external expert for his time. The items were covered according to the agenda.

Item No. 1: To confirm the minutes of the meeting of the Board of Studies held on 27th February 2020.

The members of BoS confirmed the minutes.

(Annexure-1)

Item No. 2: To report the action taken on the minutes of Board of Studies held on 27th February 2020.

The Board of Studies members noted the action taken on the decision on the previous meeting and expressed its appreciation for the efforts.

(Annexure-2)

Item No. 3: To consider and adopt the New Core courses offered in 2nd year of the MCA program for 2020 batch.

Based on the guidelines provided by AICTE, the members of the BoS recommended the curriculum of MCA program in 2nd year for 2020-22 batch as mentioned below:

List of New courses and detailed curriculum of 2nd year of MCA 2020 batch
--

	Courses offered in 2021-22 AY
Semester Third:	Values and Ethics of Profession (MCA-CC301) Minor Project and Viva-Voce and Seminar (MCA-CP301)
Semester Fourth:	Major Project and Viva-Voce (MCA-CP401)

Members of the BoS recommended adopting the curriculum/ syllabus of 2nd year of MCA as mentioned in Annexure 3.

(Annexure 3)

Item No. 4: To consider and adopt the New Elective courses to be offered for 2020 batch in 2021-22 AY.

The elective courses are categorized into 2 parts: Set A & Set B. Electives of Set A are all Theory courses and electives of Set B have the lab courses in addition to the theory courses. The new elective courses to be offered for MCA 2020 batch in 2021-22 AY are as follows:

Elective Course Code (EC)	Course Title
MCA-ECA301	Cryptography
MCA-ECA302	Compiler Design
MCA-ECA307	Cloud Computing
MCA-ECA309	Internet of Things
MCA-ECB301	Mobile Computing
MCA-EPB301	Mobile Computing Lab

The detailed curriculums of the courses are attached in Annexure 4.

(Annexure 4)

Item No. 5: To review the modality of 'Minor Project and Viva-Voce and Seminar' course of 3rd semester and 'Major Project and Viva-Voce' of 4th semester, its submission timeline and evaluation system.

Minor Project and Viva-Voce and Seminar (MCA-CP301) is a 6 credit course, which has to be adopted by every students pursuing MCA in 3rd semester. The topic/title of the Minor Project and the name of the supervisor earmarked shall be approved by a concerned project guide who shall get this approved by Head of the Faculty of Computing and Information Technology. Total marks assigned is 100, where 40 marks has to be given by Project guide based on internal assessment and 60 marks will be evaluated during end semester examination in presence of department faculty members.

External academic expert of BOS has approved the suggestion of fixing the timeline for the project submission of 3rd semester and elaborated the evaluation system as mentioned in Annexure 5.

Major Project and Viva-voce (MCA-CP401) is an integral part of MCA programme equivalent to 15 credits. MCA students are required to undertake Major Project for a period of one semester in a reputed organization connected with industry, consultancy, trade or commerce approved by the Head of the Faculty of Computing and Information Technology. Major Project is a part of the MCA 4th Semester examination, carrying 100 marks. The topic/title of the Major Project and the name of the supervisor earmarked shall be approved by Project Guide from the industry or organization and/or by an Internal Project Guide from the University. Each student shall be required to prepare Monthly Progress Report duly signed by the project guide and submit it to the Head of the Department on the last date of every month.

External academic expert of BOS has approved the suggestion of fixing the timeline for the project submission of 4th semester and elaborated the evaluation system as mentioned in Annexure 5.

(Annexure 5)

Item No. 6: To consider the implement the input the qualitative initiative as per the directions of IQAC.

The members of BoS recommended adopting the quality initiatives suggested by IQAC.

Item No. 7: To consider and implement the input recommended by Academic forum.

The BoS members recommended adopting the input recommend by academic forum.

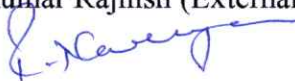
The external member of BoS authorized the chairperson/ other person of BoS for any kind of revision/change if needed.

The meeting is ended with thanks to all the members.

Date: 26-06-2021

Members Present with Signature:

1. Dr. Sharmistha Roy (Chairperson)
2. Dr. Kumar Rajnish (External Academic Expert)





Chairperson
Head

Computing & IT,
UMU, Angara, Ranchi-835103



Copy To:

- Vice Chancellor, UMU for kind information
- Pro-Vice Chancellor, UMU for kind information
- Registrar, UMU for kind information
- All members of the BOS



Faculty of Computing and Information Technology

Minutes of meeting of Board of studies held on 27th February 2020

Ref. UMU/FCIT/2020/01

Date: 27/02/2020

A meeting of the members of the Board of Studies (BoS) of the Faculty of Computing & Information Technology was held on 27-02-2020 at 10.00 am to **consider and approve the Master of Computer Applications (MCA) program of 2 years to be offered from 2020-21 AY.**

The following members were present:

- | | |
|-------------------------------|--|
| 1. Dr. Sharmistha Roy | Chairperson |
| 2. Dr. Kumar Rajnish- | External Academic Expert |
| 3. Mr. Amitabha Bhattacharjee | External Industry Expert (Joint GM, IT Services, MECON Ltd.) |

The chairperson of the Board of Studies (BoS) welcomed all of the members and thanked the external experts for their time. The items were covered according to the agenda.

Program Name: Master in Computer Application

Item No. 1: To discuss the eligibility criteria, course structure of MCA as per the CBCS guidelines of UGC.

Dr. Rajnish (external academic expert) of BoS has approved the eligibility of MCA programme for 2 years. The board members have decided that the course structure of MCA will be adopted as per AICTE guidelines. The course structure of 1st year of MCA program is attached in Annexure 1.

(Annexure-1)

Item No. 2: To consider and adopt the New Core courses and detailed syllabus to be offered in 1st year of the MCA program for 2020 batch.

Based on the UGC guidelines & CBCS course structure, the members of the BOS recommended the curriculum of 1st year of MCA program for 2020 batch offered in 2020-21 AY as mentioned below:

New Core Courses offered in 1st year of MCA program for 2020 batch	
	Courses offered in 2020-21 AY
Semester first:	Operating System (MCA-CC101) Unix and Shell Programming (MCA-CC102) Artificial Intelligence (MCA-CC103) Programming in Java (MCA-CC104) Accountancy and Financial Management (MCA-CC105) Unix Lab (MCA-CP101) Programming in Java Lab (MCA-CP102) Accountancy System Lab (MCA-CP103)
Semester Second:	Software Engineering (MCA-CC201) Data Analytics (MCA-CC202) Database Management System (MCA-CC203) Operation Research and Optimization Techniques (MCA-CC204) Data Communication and Computer Networks (MCA-CC205) Data Communication and Computer Networks Lab (MCA-CP201) Data Analytics Lab (MCA-CP202) Software Project Management Lab (MCA-CP203)

BoS members recommended adopting the curriculum/ syllabus of 1st year of the MCA program as mentioned in Annexure 2.

(Annexure 2)

Item No. 3: To discuss and finalise the PEO, PO and PSO for the MCA Program

External experts of BoS have approved the PEO, PO and PSO for the MCA Program mentioned in Annexure 3.

(Annexure-3)

Item No. 4: To decide about the Continuous Assessment process for the theory and laboratory course of MCA program.

The BOS has discussed and decided to adopt the assessment system in the ratio of 40:60 for both theory and practical course. It was decided that the continuous assessment or the Mid-term evaluation will be will be of 40% and end term assessment will be of 60%.



The Continuous Assessment of Theory course is of *40 marks* and will be of the following form:

Class Text / Quiz Test: 20 marks

Assignment: 15 marks

Attendance: 5 marks

The Continuous Assessment of Laboratory course is of *40 marks* and will be of the following form:

Lab Record: 20 marks

Quiz/ Class Test: 15 marks

Attendance: 5 marks

Item No. 5: To discuss and finalise the End semester question paper format, evaluation process.

The question paper of end term will be in the format of 100 marks whose composition is mentioned below. The question paper will be of 2 sections that is Section A and section B. Section A will consists of 05 questions; out of which 03 questions have to answer and each question carries 20 marks. Section B will consist of total 40 marks; where there is total 2 questions and student have to attempt both. Each question carries 20 marks.

In end semester, the laboratory course has two sections. 40 marks for execution and writing the programs and 20 marks for viva-voce.

Item No. 6: To consider and approve the Ordinance for two-year Master in Computer Applications (MCA) program to be effective from 2020-21 AY

Members of the BoS approved the Ordinance and detailed Course Structure of 2 year MCA program to be offered from 2020-21 AY as proposed and attached in Annexure 4

(Annexure-4)

Item No. 7: To consider and implement the inputs of the qualitative initiative as per the directions of IQAC.

The members of BoS recommended adopting the quality initiatives suggested by IQAC.

(Annexure-5)

Item No. 8: To consider and implement the input recommended by the Academic forum.

The members of BoS recommended adopting the input recommended by the academic forum.






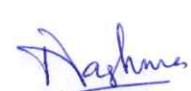

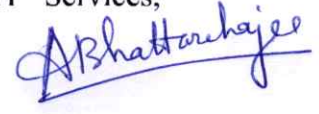
The external members of the BoS authorized the chairperson and other members of BoS for any kind of revision/change if needed.

The meeting is ended with thanks to all the members.

Date: 27-02-2020


Chairperson

Members Present with Signature:

1. Dr. Sharmistha Roy (Chairperson) 
2. Dr. Kumar Rajnish (External Academic Expert) 
3. Mr. Amitabha Bhattacharjee (External Industry Expert (Joint GM, IT Services, MECON Ltd.))    

Head
Computing & IT,
UMU, Angara, Ranchi-835103

Copy To:

- Vice Chancellor, UMU for kind information
- Pro-Vice Chancellor, UMU for kind information
- Registrar, UMU for kind information
- All members of the BOS