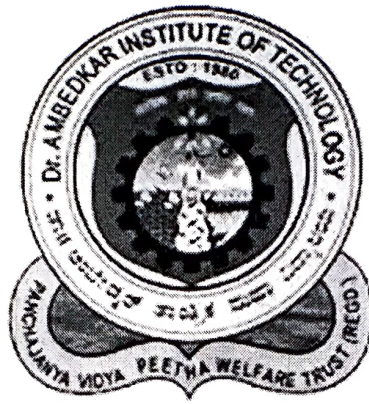


**Dr. Ambedkar Institute of Technology, Bengaluru-56**  
(An Autonomous Institute, Approved by AICTE, Affiliated to V T U, Belagavi)  
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**Master of Computer Applications**  
(Accredited by National Board of Accreditation)



Aided By Govt. of Karnataka

## **BOARD OF STUDIES**

HELD ON 15<sup>th</sup> of June 2021

1. MCA BoS Meeting Proceedings
2. Scheme and Syllabus of MCA 2020-2022
3. Scheme and Syllabus of MCA V and VI semester of 2018-2021
4. Scheme and Syllabus of Inter department Electives



**Dr. Ambedkar Institute of Technology, Bengaluru-56**  
(An Autonomous Institution, Affiliated to V T U, Belagavi)  
**Master of Computer Applications (MCA)**

**MINUTES OF BOARD OF STUDIES MEETING – MCA BOARD**

**VENUE : MCA Department**

15<sup>th</sup> June 2021

The Board of Studies meeting of MCA Program was held through online on 15<sup>th</sup> of June 2021 at 11.00 a.m.in the MCA Department at Dr. Ambedkar Institute of Technology, Bengaluru.

**AGENDA:**

1. Finalization of III and IV semester (II year) Syllabus for 2020 – 2022 scheme.
2. Review of MCA I and II semester syllabus of 2020-22 scheme.
3. Review of MCA V and VI semester syllabus of 2018-21 scheme
4. Review of Vision, Mission, and Program Educational Objectives of MCA program
5. Proposing Inter department Electives
6. Any other curriculum related matter

**The following are the members of Board of Studies**

Sl. No	Nomination of the Committee	Member Details
1	Chairman	Dr. Bharathi.S Professor(CAS), Dept. of M.C.A Dr. A.I.T, Bangalore-56 Email: <a href="mailto:bharathi.mca@drait.edu.in">bharathi.mca@drait.edu.in</a> Mob: 9902084476
2.	VTU Nominee	Dr. N.P Kavya. Professor and Director, MCA Program RNSIT, Bengaluru Email: <a href="mailto:npkavya@gmail.com">npkavya@gmail.com</a> Mob: 9945275345
3.	R & D representative	Prof. M R Muralidharan Principal Research Scientist IISc, Bengaluru Email: <a href="mailto:murali@iisc.ac.in">murali@iisc.ac.in</a> Ph: 22932895
4	External Subject Experts	Dr. Ashoka S. B. Assistant Professor & PG Coordinator Department of Computer Science Maharani Cluster University Bengaluru – 560 001 <a href="mailto:dr.ashoksbs@gmail.com">dr.ashoksbs@gmail.com</a> Dr. Daya Sagar Professor, Systems Science and Informatics Unit Indian Statistical Institute-Bangalore Centre, Bengaluru Email: <a href="mailto:bsdsagar@isibang.ac.in">bsdsagar@isibang.ac.in</a> +91-9880893291
5	Industry Representative	Mr. Mekala V. Reddy Business Operations Leader IBM, Bengaluru Email: <a href="mailto:Mekala.reddy@in.ibm.com">Mekala.reddy@in.ibm.com</a> Mob: 9880406693

Sl. No	Nomination of the Committee	Member Details
6	Member - Alumni	Mr. Varun Patel Consultant Quinnox Bangalore Email: varunpatel3069@gmail.com Mob: 9886850355
7	Internal Faculty Members with Various specializations	Dr. Indumathi. S. K Associate Professor, Dept. of M.C.A Dr. A.I.T, Bangalore-56 Email: <a href="mailto:indumathi.mca@drait.edu.in">indumathi.mca@drait.edu.in</a> Mob: 9739910995
		Ms. Shobha Rani. B.R Associate Professor, Dept. of M.C.A Dr. A.I.T, Bangalore-56 Email: <a href="mailto:shobharani.mca@drait.edu.in">shobharani.mca@drait.edu.in</a> Mob: 9740098198
		Ms. Anitha J Assistant Professor, Dept of M.C.A. Dr. A.I.T. , Bangalore – 56 Email: <a href="mailto:anitha.mca@drait.edu.in">anitha.mca@drait.edu.in</a> Mob: 9845518391

**The Board of Studies has recommended the following points after detailed deliberations.**

1. The HOD invited all the BoS members to the Google meet and welcomed all the members individually.
2. The HOD has presented the scheme and syllabus of 2020-22 of 2 years MCA Programme for 100 credits in detail and discussed semester wise, each member has suggested few changes as listed in the following points.
3. Dr. Muralidharan sir has proposed to change the course title of 20MCA32 in the III semester from Advances in Java Programming to Advanced Java Programming.
4. Dr. N.P. Kavya madam has proposed to include a program on Q-Learning in Machine learning using python lab (20MCAL36).
5. Dr. Muralidharan sir has proposed to include any network tool like wireshark in the network architecture and programming (20MCA33).
6. Mr. Varun has suggested to rename a module in Full stack web development (20MCA345) as Exposing REST APIs.

7. Dr. N.P. Kavya madam has suggested that the student technical seminar in the III semester to be related to the mini project (20MCAS39).
8. Dr. N.P. Kavya madam has suggested to include the industry certification courses along with MOOC Courses (20MCAI41) in the IV semester.
9. The BoS members recommended to rearrange the concepts of statistics in research methodology (20MCA24) and mathematical and statistical foundations for computer applications (20MCA15) in the I year syllabus.
10. The BoS has recommended modifications in the course content of Web Technologies (20MCA13) in I semester.
11. The BoS has suggested to include the ethical hacking tools in the course content of Ethical Hacking (20MCA255) in II semester.
12. The BoS has approved the list of interdepartment electives.
13. The members appreciated the designed curriculum and suggested the department to implement all the courses effectively.
14. The members of BoS recommended the scheme and syllabus of **2020-22 scheme** for 100 credits with the above specified updations and the same shall be implemented from the academic year 2021-22 onwards.
15. The HOD has presented the scheme and syllabus of V and VI semesters of 2018-21 scheme of three years MCA Programme which will be implemented during 2021-22..
16. The members reviewed the department vision, mission and PEOs and recommended the same.
17. The BoS meeting was concluded with vote of thanks by the BoS - Chairman

Chairman – BoS  
MCA Program  
Dr. Ambedkar Institute of Technology



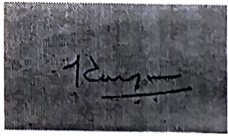
To  
The Chairman  
BOS – MCA  
Dr.AIT, Bengaluru

This is to inform that the Board of Studies meeting of MCA Program was held through online on 15<sup>th</sup> of June 2021 at 11.00 a.m.in the MCA Department at Dr. Ambedkar Institute of Technology, Bengaluru.

I have reviewed the syllabus of MCA I and II semester syllabus of 2020-22 scheme and III & IV semester (II year) Syllabus for 2020 – 2022 scheme found the following changes which can be incorporated as mentioned below.

**Comments/ Suggestions**

I hereby indicate my approval for the revised syllabus of MCA after conduction of BOS meeting held on 15<sup>th</sup> June 2021 ,as the suggestions are well incorporated

#	Name of the Nominated Member	Institution	Signature with Date
1.	Dr Kavya N P	RNSIT,Bengaluru	


To  
The Chairman  
BOS – MCA  
Dr.AIT, Bengaluru

This is to inform that the Board of Studies meeting of MCA Program was held through online on 15<sup>th</sup> of June 2021 at 11.00 a.m.in the MCA Department at Dr. Ambedkar Institute of Technology, Bengaluru.

I have reviewed the syllabus of MCA I and II semester syllabus of 2020-22 scheme and III & IV semester (II year) Syllabus for 2020 – 2022 scheme found the following changes which can be incorporated as mentioned below.

**Comments/ Suggestions**

i) The changes suggested are incorporated in the syllabus.

	<b>Name of the Nominated Member</b>	<b>Institution</b>	<b>Signature with Date</b>
2.	M.R. Muralidharan	Indian Institute of Science Bangalore	 5/7/2021

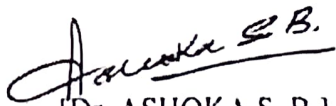
To  
The Chairman  
BOS – MCA  
Dr.AIT. Bengaluru

This is to inform that the Board of Studies meeting of MCA Program was held through online on 15<sup>th</sup> of June 2021 at 11.00 a.m.in the MCA Department at Dr. Ambedkar Institute of Technology, Bengaluru.

I have reviewed the syllabus of MCA I and II semester syllabus of 2020-22 scheme and III & IV semester (II year) Syllabus for 2020 – 2022 scheme found the following changes which can be incorporated as mentioned below.

**Comments/ Suggestions**

- i). The syllabus is Very Useful for students to seek their career in industries.
- ii) Introducing Industry level courses helps a lot for students as well as faculties
- iii) The changes suggested are incorporated in the syllabus

#	Name of the Nominated Member	Institution	Signature with Date
1.	Dr Ashoka .S.B	Maharani Cluster University.	 [Dr. ASHOKA S. B.]

To  
The Chairman  
BOS – MCA  
Dr.AIT, Bengaluru

This is to inform that the Board of Studies meeting of MCA Program was held through online on 15<sup>th</sup> of June 2021 at 11.00 a.m.in the MCA Department at Dr. Ambedkar Institute of Technology, Bengaluru.

I have reviewed the syllabus of MCA I and II semester syllabus of 2020-22 scheme and III & IV semester (II year) Syllabus for 2020 – 2022 scheme found the following changes which can be incorporated as mentioned below.

**Comments/ Suggestions**

- i) The changes suggested are incorporated in the syllabus.
- ii) Syllabus is formed based on Emerging Trends in Information Technology.

#	Name of the Nominated Member	Institution	Signature with Date
1.	B. S. Daya Sagar	Indian Statistical Institute – Bangalore Centre	B. S. Daya Sagar



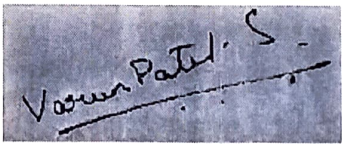
To  
The Chairman  
BOS – MCA  
Dr.AIT, Bengaluru

This is to inform that the Board of Studies meeting of MCA Program was held through online on 15<sup>th</sup> of June 2021 at 11.00 a.m.in the MCA Department at Dr. Ambedkar Institute of Technology, Bengaluru.

I have reviewed the syllabus of MCA I and II semester syllabus of 2020-22 scheme and III & IV semester (II year) Syllabus for 2020 – 2022 scheme found the following changes which can be incorporated as mentioned below.

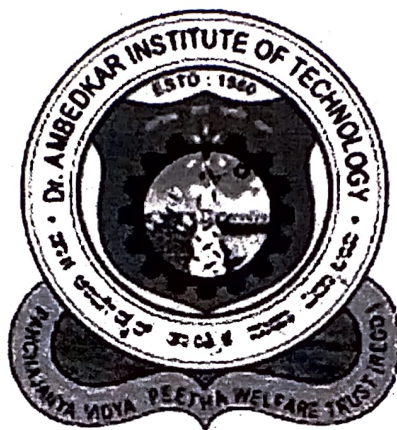
**Comments/ Suggestions**

- i) The changes suggested are incorporated in the syllabus.
- ii) Syllabus is formed based on Emerging Trends in Information Technology.

#	Name of the Nominated Member	Institution	Signature with Date
3.	Varun Patel S	Dr. A.I.T.	 09/07/2021

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**Master of Computer Applications Program**  
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## **Board of Studies**

**held on 13<sup>th</sup>, August 2020**

- 1. MCA BoS Meeting Proceedings**
- 2. Scheme And Syllabus of MCA 2 years (100 Credits)**
- 3. Scheme And Syllabus of MCA V and VI semester (2018-21 Scheme)**
- 4. Scheme and Syllabus of Inter department Electives**

**Dr. Ambedkar Institute of Technology, Bengaluru-56**  
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## **Board of Studies**

**held on 13<sup>th</sup>, August 2020**

**MCA BoS Meeting Proceedings**



**Dr. Ambedkar Institute of Technology, Bengaluru-56**  
(An Autonomous Institution, Affiliated to V T U, Belagavi)  
**Master of Computer Applications (MCA)**

**MINUTES OF BOARD OF STUDIES MEETING – MCA BOARD**

**VENUE : MCA Department**

13<sup>th</sup> August 2020

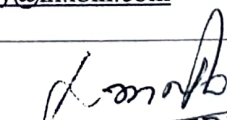
The Board of Studies meeting of MCA Program was held through online on 13<sup>th</sup> of August 2020 at 11.00 a.m.in the MCA Department at Dr. Ambedkar Institute of Technology, Bengaluru

**AGENDA:**

1. Finalization of MCA curriculum Scheme for two years duration (2020-22 scheme for 100 credits)
2. Finalization of I year Syllabus for 2020 – 2022 scheme.
3. Review of MCA V and VI semester syllabus of 2018-21 scheme.
4. Review of Vision, Mission, and Program Educational Objectives of MCA program
5. Proposing Inter department Electives
6. Any other curriculum related matter

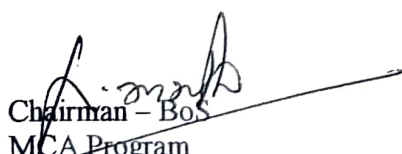
**The following are the members of Board of Studies**

Sl. No	Nomination of the Committee	Member Details
1	Chairman	Dr. L. Manjunatha Rao Professor & Head, Dept. of M.C.A Dr. A.I.T, Bangalore-56 Email: manjuarjun2004@yahoo.com Mob: 9341214327
2.	VTU Nominee	Dr. N.P Kavya. Professor and Director, MCA Program RNSIT, Bengaluru Email: npkavya@gmail.com Mob: 9945275345
3.	R & D representative	Prof. .M R Muralidharan Principal Research Scientist IISc, Bengaluru Email: murali@iisc.ac.in Ph: 22932895
4	External Subject Experts	Dr. Hanumanthappa. M Professor & Director(IQAC- NAAC) Department of Computer Science & Applications, Bangalore University, Bangalore 56. Email:hanu6572@gmail.com Ph:9448819017, 080-22961451 Dr. Daya Sagar Professor, Systems Science and Informatics Unit Indian Statistical Institute-Bangalore Centre, Bengaluru Email:bsdsagar@isibang.ac.in +91-9880893291
5	Industry Representative	Mr. Mekala V. Reddy Business Operations Leader IBM, Bengaluru Email: Mekala.reddy@in.ibm.com Mob: 9880406693

  
D. L. MANJUNATHA RAO  
Professor & Head  
MCA Programme



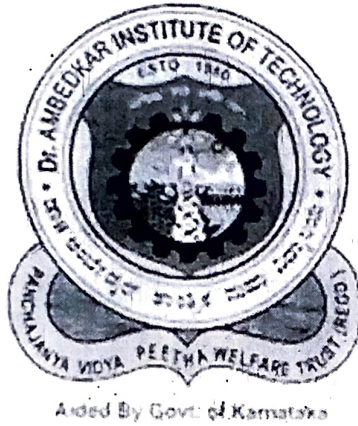
5. Dr. N.P. Kavya madam has proposed to change the course title in the second semester as Web Technologies instead of Advances in Web Technologies and also suggested to emphasize more on fundamentals.
6. Dr. N.P. Kavya madam has suggested to remove the NOSQL Databases course and introduce RDBMS course in the second semester and also suggested to include NOSQL as one of the modules in Big Data Analytics as elective course.
7. Dr. N.P. Kavya madam has suggested changing the course title from Industry Internship and MOOC Course to MOOC Course and Industry Internship in the fourth semester.
8. Mr. Varun has suggested to advice the students to take up the same problem for both internship and project work to gain more technical knowledge and confidence in the same domain.
9. Mr. Mekhala V. Reddy sir has suggested to register a MOOC course in the same area of internship and project to get in depth technical skills in a specific area of interest.
10. The members appreciated the listed courses and suggested the department to implement all the courses effectively.
11. The members of BoS recommended the scheme and syllabus of **2020-22 scheme** for 100 credits with the above specified updations and the same shall be implemented from the academic year 2020 onwards.
12. The HOD has presented the scheme and syllabus of V and VI semesters of 2018-21 scheme of three years MCA Programme which will be implemented during 2020-21 onwards.
13. The members reviewed the 2018-21 scheme and suggested to change the course title as Machine Learning using Python (18MCA51) instead of Machine Learning in the fifth semester and recommended the syllabus of MCA V and VI semesters to implement from the academic year 2020-21 onwards.
14. The members reviewed the department vision, mission and PEOs and recommended the same.
15. The BoS has recommended the list of inter department electives.
16. The BoS meeting was concluded with vote of thanks by the BoS - Chairman

  
Chairman - BoS  
MCA Program  
Dr. Ambedkar Institute of Technology

Dr. L. MANJUNATHA RAO  
Professor & Head  
MCA Programme  
Dr. Ambedkar Institute of Technology  
Bangalore - 560 050.

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2019 (BOS)

1. BOS Proceedings
2. 2018-21 Scheme
3. Syllabus of III and IV semesters (2018-21) scheme
4. Modified syllabus of V semester (2016-19) scheme

Dr. L. MANJUNATHA RAO  
Professor & Head  
MCA Programme  
Dr. Ambedkar Institute of Technology  
Bangalore - 560 056.



**Dr. Ambedkar Institute of Technology, Bengaluru-56**  
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**Master of Computer Applications (MCA)**

**MINUTES OF BOARD OF STUDIES MEETING – MCA BOARD**  
**VENUE : MCA Department**

31<sup>st</sup> May 2019.

The Board of Studies meeting of MCA Program at Dr. Ambedkar Institute of Technology was held on 31<sup>st</sup> of May 2019 at 10.30 a.m. in the Department of M.C.A., Dr. AIT Campus, Bengaluru – 560 056.

**AGENDA:**

1. Finalization of Syllabus Scheme 2018 – 21 of MCA Programme  
(Review of Vision, Mission, and Program Educational Objectives)
2. Review of MCA III and IV semester syllabus for the academic year 2019-20
3. Review of MCA V and VI semester scheme
4. Any other curriculum related matter

**The following are the members of Board of Studies**

Sl. No	Nomination of the Committee	Name of the Person
1	Chairman HOD	Dr. L. Manjunatha . Rao Prof. & Head, Dept. of M.C.A Dr. A.I.T, Bangalore-56 e-mail: manjuarjun2004@yahoo.com Mob: 9341214327
2.	VTU Nominee	Dr. N P Kavya. Professor, MCA Program RNSIT, Bengaluru Mailid: npkavya@gmail.com Mob: 9945275345
3.	Industry / R & D representatives	Prof. M R Muralidharan Principal Research Scientist IISc, Bengaluru murali@iisc.ac.in Ph: 22932895
4		Dr. Hanumanthappa . M Professor & Chairman, Department of Computer Science & Applications, Bangalore University, Bangalore 56.

*L. Manjunatha Rao*  
Dr. L. MANJUNATHA RAO  
Professor & Head  
MCA Programme  
Dr. Ambedkar Institute of Technology  
Bengaluru - 560 056



	External Subject Experts	<p>Ph:9448819017, 080-22961451</p> <p>Dr. Daya Sagar Professor Systems Science and Informatics Unit Indian Statistical Institute-Bangalore Centre, Bengaluru <a href="mailto:bsdsagar@isibang.ac.in">bsdsagar@isibang.ac.in</a> -91-9880893291</p>
5	Industry Representative	<p>Mr. Mekala V Reddy Business Operations Leader IBM, Bengaluru <a href="mailto:Mekala.reddy@in.ibm.com">Mekala.reddy@in.ibm.com</a> Mob: 9880406693</p>
6	Member	<p>Mrs. Shwetha Basavaraj Senior Project Manager, Infosys, Bengaluru <a href="mailto:Shwetha_basavaraj@infosys.com">Shwetha_basavaraj@infosys.com</a> Mob: 9535663663</p>
7	Internal Faculty Members with Various specializations	<p>Dr. Bharathi S Associate Professor Dept. of M.C.A Dr. A.I.T, Bangalore-56 e-mail: <a href="mailto:bharathishivu_s@yahoo.co.in">bharathishivu_s@yahoo.co.in</a> Mob: 9902084476</p> <p>Dr. Indumathi. S. K Associate Professor, Dept. of M.C.A Dr. A.I.T, Bangalore-56 e-mail: <a href="mailto:indukarthik2009@yahoo.in">indukarthik2009@yahoo.in</a> Mob: 9739910995</p> <p>Ms. Shobha Rani. B.R Associate Professor, Dept. of M.C.A Dr. A.I.T, Bangalore-56 e-mail: <a href="mailto:shobhakrishna8@gmail.com">shobhakrishna8@gmail.com</a> Mob: 9740098198</p> <p>Ms. Anitha J Assistant Professor, Dept of M.C.A. Dr. AIT, Bangalore – 56 Email: <a href="mailto:alochan@rediffmail.com">alochan@rediffmail.com</a></p>

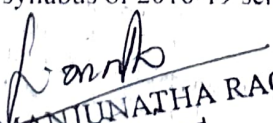
  
**Dr. L. MANJUNATHA RAO**  
 Professor & Head  
 MCA Programme  
 Madkar Institute of Technology  
 - 560 056.



The Board of Studies has recommended the syllabus of MCA Programme (2018-21 Scheme) for the academic year 2019-20. The following suggestions were made

1. Proposed the scheme and the detailed syllabus of all semesters of MCA programme (2018-21 scheme) as per Outcome Based Education in accordance with professional societies like ACM, IEEE - Computer Society of India and NBA graduate attributes.
2. The syllabus has been framed with equal weightage of credits to all the components (core academics, industry requirement, research orientation, lifelong learning and societal consciousness)
3. Electives were offered in the light of new advancements in the field of information technology.
4. Proposed credit weightage for lectures, tutorials, lab sessions, seminars, mini project, internship and major project for each course.
5. The Syllabus is designed with proportionate credits as per NBA program outcomes of MCA programme by including mathematics, management, humanities, professional core, electives, project work, seminar, internship, lifelong learning and societal consciousness as per VTU guidelines.
6. Proposed the Scheme of Teaching and Examination for all six semesters of MCA programme.
7. Defined the Course Outcomes (COs) as per the Outcome Based Education of NBA.
8. The BoS has recommended the detailed syllabus, rules and regulations, scheme of teaching and examination for all the six semesters.
9. Proposed the complete scheme with course title, course code, credit distribution details, examination hours, marks allotted etc. The BoS members recommended the proposed scheme with few suggestions, accordingly the scheme was updated.
10. The BoS members proposed the following recommendations  
Members suggested to have 1.5 credits to each lab that is 18MCAL58 (Cloud Computing Lab) and 18MCAL57 (Big Data Analytics Lab)
11. The BOS members advised to carry out the internship of 2016-19 scheme to be completed before the commencement of V semester soon after the examinations of IV semester for the students of V semester for the academic year 2019-20. Internship has to be evaluated in MCA V semester by the respective guides and the marks has to be entered along with the sixth semester marks as per the MCA 6<sup>th</sup> semester 2016-19 scheme. (To provide the entire 6<sup>th</sup> semester to carry out major project)
12. The BoS has recommended MCA III and IV semester detailed syllabus of 2018-21 scheme and MCA V and VI semester syllabus of 2016-19 scheme.

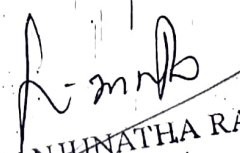
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Dr. L. MANJUNATHA RAO  
Professor & Head  
MCA Programme  
Dr. Ambedkar Institute of Technology  
Bangalore - 560 056.

13. The Syllabus was finalized by incorporating all the suggestions made by the honorable members.
14. Dr. Kavya of VTU nominee has suggested to include NOSQL in ADBMS course and accordingly incorporated.
15. The members suggested to include Research Methodology in IV semester and allow the students to carry out the project as a full-time intern.
16. The following are the recommendations in III and IV semester syllabus from the academic year 2019-20

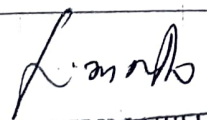
### III Semester

Proposed Scheme		Recommended Scheme		Remarks
Subj. Code	Subj. Name	Subj. Code	Subj. Name	
18MCA31	Network Architecture And Management	18MCA31	Network Architecture & Management	No Change
18MCA32	Python Programming	18MCA32	Python Programming	No Change
18MCA34	Advanced Software Engineering	18MCA33	Advanced Software Engineering	No Change
18MCA33	Object Oriented Modelling and Design	18MCA34	Data Science using R	Recommended
18MCA35	Elective - I	18MCA35	Elective - I	
18MCAL36	Computer Networks Lab	18MCAL36	Network Architecture Lab	No Change
18MCAL37	Python Programming Lab	18MCAL37	Python Lab	No Change
18MCAL38	OOMD Lab	18MCAL38	Data Science using R Lab	Recommended
<b>Elective - I</b>				
18MCA351	NOSQL	18MCA351	Software Testing and Practices	Recommended
18MCA352	Aptitude Skill based learning	18MCA352	Advanced DBMS	Recommended
18MCA353	Operations Research	18MCA353	Artificial Intelligence	Recommended

  
**Dr. L. MANJUNATHA RAO**  
 Professor & Head  
 MCA Programme  
 Dr. Ambedkar Institute of Technology  
 Bangalore - 560 056.

IV Semester

Proposed Scheme		Recommended Scheme		Remarks
Subj. Code	Subj. Name	Subj. Code	Subj. Name	
18MCA41	Advanced Java Programming	18MCA41	Enterprise Applications - I	No Change
18MCA42	Advanced Web Technologies	18MCA42	Advanced Web Technologies	No Change
18MCA43	Software Testing and Practices	18MCA43	Analytical Skills and Building Professional Development	Recommended
18MCA44	Elective - 2	18MCA44	Elective - 2	
18MCA45	Management Elective - 3	18MCA45	Elective - 3	
		18MCA46	Research Methodology	Recommended
18MCAL46	Advanced Java Programming Lab			
18MCAL47	Software Testing Lab	18MCAL47	Enterprise Applications Lab	Recommended
18MCAL48	Mini project using Web Technologies Lab	18MCAL48	Advanced Web Technologies Lab	Recommended
		18MCA49	Mini project using Android	Recommended
<b>Elective - 2</b>				
18MCA441	Data science using R	18MCA441	Information Security	Recommended
18MCA442	Artificial Intelligence	18MCA442	Advanced DBMS	Recommended
18MCA443	Software Architecture	18MCA443	Object Oriented and Design	Recommended
18MCA444	Soft Computing	-	-	-
<b>Elective - 3</b>				
Proposed Scheme		Recommended Scheme		Remarks
Subj. Code	Subj. Name	Subj. Code	Subj. Name	
18MCA451	Software Project Management	18MCA441	Software Quality & Performance Evaluation	Recommended
18MCA452	Professional Development and Leadership	18MCA452	Software Architecture	Recommended
18MCA453	Enterprise Resource Planning	18MCA453	Enterprise Resource Planning	No Change

  
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 MCA Programme  
 Dr. Ambedkar Institute of Technology

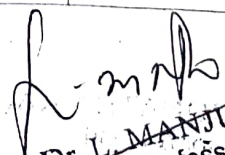
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18MCA454	E-Commerce and Management Information Systems	-	-	-
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V Semester

Proposed Scheme		Recommended Scheme		Remarks
Subj. Code	Subj. Name	Subj. Code	Subj. Name	
18MCA51	Programming using C# and .Net	18MCA51	Machine Learning	Recommended
18MCA52	Big Data Analytics	18MCA52	Big Data Analytics	No Change
18MCA53	Cloud Computing	18MCA53	Cloud Computing	No Change
18MCA54	Elective - 4	18MCA54	Elective - 4	
18MCA55	Elective - 5	18MCA55	Elective - 5	
18MCAL56	.Net Lab	18MCAL56	Machine Learning Lab	Recommended
18MCAL57	Big Data Analytics Lab	18MCAL57	Big Data Analytics Lab	No Change
18MCAL58	Mini project using Android Framework	18MCAL58	Cloud Computing Lab	Recommended
		18MCA159	Industry Internship (6 weeks)	Recommended
<b>Elective - 4</b>				
Proposed Scheme		Recommended Scheme		Remarks
18MCA541	Virtual Reality	18MCA541	Enterprise Applications - 2	Recommended
18MCA542	DevOps	18MCA542	Full Stack Development with MERN	Recommended
18MCA543	Internet of Things	18MCA543	DevOps	Recommended
18MCA544	Advanced Spreadsheets	-	-	-
<b>Elective - 5</b>				
18MCA551	System Simulation and Modeling	18MCA551	Web Services	Recommended
18MCA552	Cybersecurity and cyber law	18MCA552	Internet of Things	Recommended
18MCA553	Mobile ad hoc and Sensor Networks	18MCA553	Block Chain Technology	Recommended
18MCA554	Service Oriented Architecture	-	-	-

  
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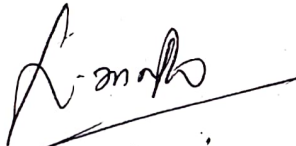
17. It was suggested to make the students to learn a readily available larger open source application programs to understand the workflow of applications.

18. Motivate the students to register for online courses through NPTEL, MOOC or Swayam web portals.

19. Industry representatives to be invited for handling few sessions of each course.


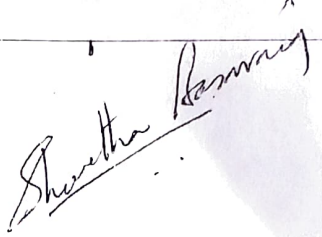
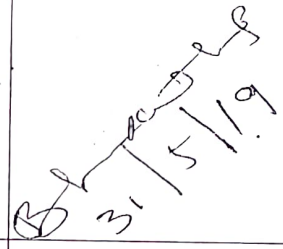
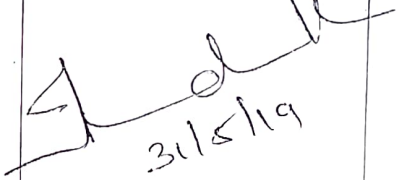

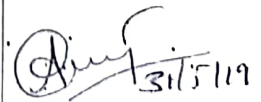
20. The members had recommended few changes in MCA V semester syllabus of IoT, Cloud Computing, Web Engineering and Big Data Analytics courses of 2016-2019 scheme which will be implemented during 2019-20 odd semester

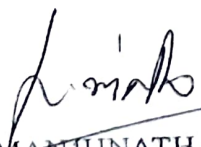
The BoS meeting was concluded with vote of thanks address by the BoS - Chairman.




Dr. L. MANJUNATHA RAO  
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MCA Programme  
Dr. Ambedkar Institute of Technology  
Bangalore - 560 056.

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Sl. No	Nomination of the Committee	Name of the Person	Signature
5	Industry Representative	Mr. Mekala V Reddy Business Operations Leader IBM, Bengaluru <a href="mailto:Mekala.reddy@in.ibm.com">Mekala.reddy@in.ibm.com</a> Mob: 9880406693	
6	Member	Mrs. Shwetha Basavaraj Senior Project Manager, Infosys, Bengaluru <a href="mailto:Shwetha_basavaraj@infosys.com">Shwetha_basavaraj@infosys.com</a> Mob: 9535663663	
7	Internal Faculty Members with Various specializations	Dr. Bharathi.S Associate Professor Dept. of M.C.A Dr. A.I.T,Bangalore-56 e-mail: <a href="mailto:bharathishivus@yahoo.co.in">bharathishivus@yahoo.co.in</a> Mob: 9902084476	
		Dr. Indumathi. S.K Associate Professor, Dept. of M.C.A Dr. A.I.T,Bangalore-56 e-mail: <a href="mailto:indukarthik2009@yahoo.in">indukarthik2009@yahoo.in</a> Mob: 9739910995	
		Ms. Shobha Rani. B.R Associate Professor, Dept. of M.C.A Dr. A.I.T,Bangalore-56 e-mail: <a href="mailto:shobhakrishna8@gmail.com">shobhakrishna8@gmail.com</a> Mob: 9740098198	
		Ms. Anitha J Assistant Professor, Dept of M.C.A. Dr. AIT, Bangalore - 56 Email: <a href="mailto:alochan@rediffmail.com">alochan@rediffmail.com</a>	

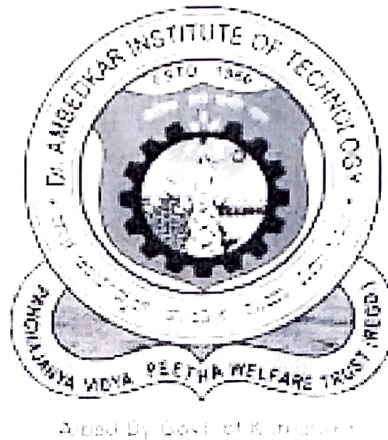
  
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Chairman - BOS  
MCA Program 3/15/19



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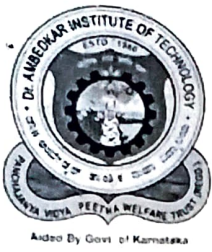
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## **BOARD OF STUDIES**

**Held on 19<sup>th</sup> June 2018**

- 1. BoS Meeting Proceedings**
- 2. Finalisation of Scheme & Syllabus of I to VI Semester (2018-21 Scheme)**
- 3. MCA V & VI Semester Syllabus (2016-19 Scheme)**



**Dr. Ambedkar Institute of Technology, Bengaluru-56**  
(An Autonomous Institute, Affiliated to V T U, Belagavi)  
**Master of Computer Applications (MCA)**

**MINUTES OF BOARD OF STUDIES MEETING – MCA BOARD**

**VENUE : MCA Department**

19<sup>th</sup> June 2018

The Board of Studies meeting of MCA Program at Dr. Ambedkar Institute of Technology was held on 19<sup>th</sup> of June 2018 in the Department of M.C.A., Dr. AIT Campus, Bengaluru - 560056.

**The following are the members of BoS meeting**

Sl. No	Category	Nomination of the Committee	Name of the Person
1	Head of the Department	Chairperson	<b>Dr. L. Manjunatha Rao</b> Prof. & Head, Dept. of M.C.A Dr. A.I.T, Bangalore-56 9341214327 manjuarjun2004@yahoo.com
2.	Experts from outside college nominated by VTU	Member	<b>Dr. K.S. Shreedhara</b> Professor Dept of Computer Science and Engineering UBDT College, Davanagere. 9448009306 ks_shreedhara@yahoo.com
3.	Internal Faculty members with various specializations	Member-1	<b>Dr. Bharathi.S</b> Professor (CAS) Dept. of M.C.A Dr. A.I.T, Bangalore-56 Mob: 9902084476 bharathishivus@yahoo.co.in



Sl. No	Category	Nomination of the Committee	Name of the Person
	Internal Faculty members with various specializations	Member-2	<b>Dr. Chandrakanth. G. Pujari</b> Associate Professor Dept. of M.C.A Dr. A.I.T, Bangalore-56 9845380013 varuncp@rediffmail.com
		Member-3	<b>Dr. Indumathi. S. K</b> Associate Professor, Dept. of M.C.A Dr. A.I.T, Bangalore-56 9739910995 indukarthik2009@yahoo.in
		Member-4	<b>Dr. Dharani N V</b> Assistant Professor, Dept. of M.C.A Dr. A.I.T, Bangalore-56 9739910995 dharanimanoj@gmail.com
4.	Subject Experts from outside the college nominated by academic council	Member-1	<b>Dr. Hanumanthappa . M</b> Professor & Chairman, Department of Computer Science & Applications, Bangalore University, Bangalore 56. Ph:9448819017, 080-22961451
		Member-2	<b>Dr. Daya Sagar</b> Professor Systems Science and Informatics Unit, Indian Statistical Institute-Bangalore Centre, Bengaluru 9880893291 bsdsagar@isibang.ac.in

Sl. No	Category	Nomination of the Committee	Name of the Person
5.	Representative from industry/Corporate sector/allied area relating to placement nominated by academic council	Member-1	<b>Mr. Purushotham B</b> Technical Training Head Mahindra Comviva Bangalore 9980643711 utham74@gmail.com
6.	Representative from industry/Corporate sector/allied area relating to placement nominated by academic council	Member-2	<b>Mr. Chandrashekar Aithal</b> Technical Lead, J.P. Morgan Chase Bangalore 9008059555 aithalchandra@gmail.com
7.	Post graduate meritorious alumnus nominated by Principal	Member	<b>Mr. Pradeep</b> MDM Developer Groove Software Pvt. Ltd Bangalore 7204265665 Prad.trilok@gmail.com
8.	Special Invitees	Member-1	<b>Ms. Malathi. P</b> Assistant Professor, Dept. of M.C.A Dr. A.I.T, Bangalore-56 Mob: 7760880325 bfgcpm@rediffmail.com
		Member-2	<b>Ms. Shailaja L K</b> Assistant Professor Dept. of MCA, Dr. AIT, Bengaluru- 56 Mob: 9739006255 shailaja_lk@yahoo.co.in

### Minutes of BoS Meeting

The chairman welcomed all the member of BoS and introduced each one of them to the panel.

- The chairman shared that the MCA Department has been accredited by NBA. The members of BoS congratulated the department for obtaining NBA accreditation. The chairman explained the significance of NBA accreditation to the members.

- The members reviewed the vision and mission of the department. They have recommended the vision and mission as it is, which is mapping with the institution mission and vision.

**The Board of Studies recommended the syllabus for MCA Programme for the academic year 2018-19 with the following suggestions through deliberations:**

1. Proposed the detailed syllabus for all 6 semesters of MCA program as per CBCS from the academic year 2018 - 2019 by finalizing the core and elective subjects with respect to current industry and all stake holders' requirements (as per the guide lines of ACM, IEEE - Computer Society of India and NBA).
2. Proposed the detailed syllabus for V and VI semesters of MCA program of 2016-19 scheme as per CBCS for the academic year 2018 - 2019 and proposed few suggestions.
3. Proposed the detailed syllabus for all 4 semesters of MCA Direct Program (Two-year program) as per CBCS from the academic year 2018 - 2019 by finalizing the core and elective subjects with respect to current industry and all stake holders' requirements (as per the guide lines of ACM, IEEE - Computer Society of India and NBA).
4. The syllabus has been framed with equal weightage of credits to the three components: core academics, industry requirements, and research orientation.
5. Electives are offered in the light of new advancements in the field of information technology.
6. Proposed credit weightage for various components like lectures, tutorials, practicals, seminars, mini projects and Major project for each course.
7. Credits for curriculum components in Master of Computer Applications programme are allotted (mathematics, management, humanities, professional core, electives, project work, and seminar) as per VTU guidelines.
8. Proposed the Scheme of Teaching and Examination for all six/four semesters of MCA programme.
9. Proposed the Course Outcomes (COs) as per the Outcome Based Education of NBA.
10. The BoS has recommended the detailed syllabus, rules and regulations, scheme of teaching and examination for the fifth and sixth semesters of 2016-19 scheme.
  - I. Suggested the board to advice the students to deploy the projects in cloud with Azure or Microsoft cloud tools
  - II. Professional Development and leadership skills should be imbibed by students through seminars for achieving lifelong learning skills.

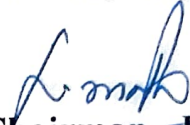


- III. The members advised to include more lab sessions while handling mobile applications
  - IV. Mini project can be a mobile application deployed in cloud
  - V. The members advised to make the students to publish the sixth semester projects in selected and reputed journals
11. The BoS has recommended the detailed syllabus, rules and regulations, scheme of teaching and examination for V and VI semesters of 2018-21 scheme
- I. Suggested that mobile applications to be lab-based subject
  - II. Introduce Devops as an elective. And also it was suggested to invite a resource person from industry to provide a talk on the industry expectations of Devops
  - III. The I semester subjects to be renamed as Linux Programming, OOPs using C++, Web Technologies, Discrete Mathematical Structures.
  - IV. Members suggested to include the concepts of Tuples, Strings, Databases in Python Programming
  - V. NOSQL Database to replace with Advanced DBMS and include MongoDB
  - VI. To replace Software Engineering with Advanced Software Engineering and include two modules of agile technology, SCRUM, RAD
  - VII. Web Engineering to include REST, SOAP, JSON
  - VIII. Networks lab to be based on virtualization or packet analyzer tools
  - IX. To include an elective for practicing aptitude and soft skills and to mentor students to handle aptitude and soft skill techniques as seminars to improve recruitment process
  - X. Advanced Web Programming to include PHP, JQuery and Angular
  - XI. Software Testing and Practice to have selenium with webdrivers, Cucumbers, Citrus for BDD, TDD
  - XII. Service Oriented Architecture to be replaced by Devops
  - XIII. Introduce Machine Learning as an elective instead of Cloud Computing
  - XIV. An elective on Cyber laws and Cyber Security to be included as per the advice of the GOI
  - XV. The BoS committee recommended for final approval of MCA syllabus
    - A) MCA V and VI Semesters of 2016-2019 scheme.
    - B) MCA I – IV semesters of 2018-2020 scheme of MCA Two-years Direct Program
    - C) MCA I – VI semesters of 2018-2021 scheme of MCA program

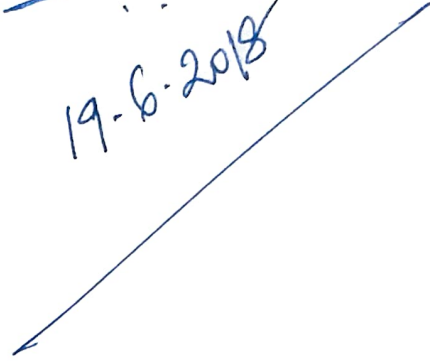


12. The Syllabus was finalized by incorporating all the suggestions

**The BoS meeting was concluded with vote of thanks address by the chairman.**

  
**Chairman - BoS**

19-6-2018




**Dr. Ambedkar Institute of Technology, Bengaluru-56**

**Master of Computer Applications**

**Dr. AIT Curriculum deviation from VTU**

Sl.No	Semester	Subject Code	Subject Name	Name of the new topics modified & changed in the subjects
1.	I	18MCA14	Discrete Mathematical Structures	Relations & Functions, Graph theory
2.	II	18MCA21	Java Programming	Applets
3.	II	18MCA22	Data Structures using C++	Recursion, Advanced Concepts in Trees, Multiway trees
4.	III	18MCA31	Network Management and Architecture	Protocols and Standards, Larger Networks, Wireless Networks, Emerging Network Technologies
5.	III	18MCA32	Python Programming	Python Data base Connectivity, Introduction to Networking concepts in python
6.	III	18MCA34	Data Science Using R	<b>New syllabus introduced</b>
7.	III	18MCA351	Software Testing and Practices(Elective)	Types of Testing, Overview of Selenium, Selenium web drivers to perform UI testing, Application Programming Interface(API) Testing, BDD,TDD & Introduction to COCUMBER framework
8.	III	18MCA352	Advanced DBMS(Elective)	<b>New syllabus introduced</b>
9.	III	18MCA353	Artificial Intelligence(Elective)	<b>New syllabus introduced</b>
10.	IV	18MCA41	Enterprise Applications-1 (Advanced Java Programming)	Spring Framework, Spring MVC
11.	IV	18MCA42	Advanced Web Programming	AngularJS, NodeJS
12.	IV	18MCA441	Information Security(Elective)	Program Security, Database Security, Administrative Security

  
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13.	IV	18MCA442	Data Mining & Business Intelligence(Elective)	Business view of information technology applications, Business Intelligence
14.	IV	18MCA443	Object Oriented Analysis & Design(Elective)	Concept of Forward Engineering and Reverse Engineering
15.	IV	18MCA451	Software Quality Performance Evaluation(Elective)	<b>New syllabus introduced</b>
16.	IV	18MCA452	Software Architecture(Elective)	Architectural styles & case studies
17.	IV	18MCA453	Enterprise Resource Planning(Elective)	Business Process Reengineering, ERP Case Studies
18.	V	18MCA52	Big Data Analytics	Hadoop Tools- Pig, Hive,Data Visualization with Tableau
19.	V	18MCA53	Cloud Computing Theory & Practice	Cloud Management, Advanced Topics in Cloud Computing
20.	V	18MCA542	Full Stack Development with MERN(Elective)	<b>New syllabus introduced</b>
21.	V	18MCA543	DevOps (Elective)	<b>New syllabus introduced</b>
22.	V	18MCA551	Web Services (Elective)	<b>New syllabus introduced</b>
23.	V	18MCA552	Internet of Things (Elective)	Real Time Applications (Case study)
24.	V	18MCA553	Block Chain Technology(Elective)	<b>New syllabus introduced</b>

  
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19/08/2018

**Dr. Ambedkar Institute of Technology, Bengaluru-560 056**

**Department: MCA**

**Dr.AIT curricular deviation from VTU (MCA I & II Semester)**

S. No	VTU Curriculum	Dr.AIT Curriculum	% of Deviation
1	Object Oriented Programming with C++	Object Oriented Programming using C++	10%
2	Unix and Shell Programming	Linux Programming	0%
3	Web Technologies	Web Technologies	0%
4	Software Engineering (Offered in MCA III semester @ Dr.AIT)	Discrete Mathematical Structures	20%
5	Computer Organization	Computer Organization and Architecture	10%

S. No	VTU Curriculum	Dr.AIT Curriculum	% of Deviation
1	Programming using Java	Java Programming	10%
2	Data Structures using C++	Data Structures using C++	20%
3	Discrete Mathematical Structures and Statistics (Offered in MCA I semester @ Dr.AIT)	Analysis and Design of Algorithms (Offered in MCA III semester @ Dr.AIT)	20%
4	Computer Networks (Offered in MCA III semester @ Dr.AIT)	Database Management System	60%
5	Operating Systems	Operating System	0%

  
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**Department of MCA**  
**Dr.AIT Curriculum deviation from VTU (Semester III)**

#	VTU Curriculum	Dr.AIT Curriculum	% of deviation
1.	Database management System	Network Architecture & Management	60%
		(In VTU offered in 2 <sup>nd</sup> semester)	10%
2.	Programming using python	Python Programming	30%
3.	Analysis and design of Algorithm	Advanced Software Engineering (In VTU offered in 2 <sup>nd</sup> semester)	0%
4.	System Software	Data Science using R*	100%
<b>Elective-1</b>			
5.	Software Testing	Software testing	20%
6.	Optimization Techniques	Advance DBMS (In VTU offered in 4 <sup>th</sup> semester)	40%
7.	Advanced computer Networks	Artificial Intelligence*	100%
8.	Management Information System	Offering 3 courses per elective	

\*Introduced as new subjects

  
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**Department of MCA**  
**Dr.AIT Curriculum deviation from VTU (Semester IV)**

#	VTU Curriculum	Dr.AIT Curriculum	% of deviation
1.	Advanced Java Programming	Enterprise Applications-I (Advanced java Programming)	30%
2.	Advanced Web programming	Advanced Web Technologies	30%
3.	Object oriented Modelling and Design	Object oriented Modelling and Design (Made as elective in 4 <sup>th</sup> semester)	10%
4.	Professional communication & report writing	Analytical Skills And Building Professional Development	40%
<b>Elective II</b>			
5.	Wireless Communication and Mobile Technologies	Information Security*	100%
6.	Cyber Security	Software Architecture	10%
7.	Computer Graphics	Object oriented Modelling & Design	10%
8.	Cloud Computing	Offered as core in 5 <sup>th</sup> sem	40%
		Offering 3 courses per elective	
<b>Elective III</b>			
9.	Enterprise Resource Planning(ERP)	Enterprise Resource Planning	0%
10.	Data Warehousing and Data mining	Data Mining & Business Intelligence	30%
11.	Advanced Database Management System	Software Quality & Performance Evaluation*	100%
12.	Big Data Analytics	Offered as core in 5 <sup>th</sup> semester.	30%

\*Introduced as new Subject

*L. Manjunatha Rao*  
 19/6/2018  
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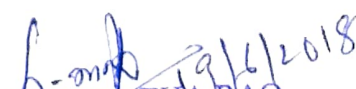
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Department: MCA

Dr. AIT Curriculum Deviation from VTU (Semester V)

S.No	VTU Curriculum	Dr. AIT Curriculum	% of deviation
1	Programming using C#.net	Bigdata Analytics	40%
		Enterprise Application – 2 (Introduced as elective subject)	0%
2	Mobile Applications	Cloud Computing	40%
		Mobile Application Development using Android Framework (introduced as lab component in IV sem)	100%
3	Machine Learning	Machine Learning	0%
Elective Courses - 4			
1	Multimedia Systems	Enterprise Application – 2	100%
2	Computer Graphics	FullStack Development with MERN*	100%
3	Image Processing	DevOps*	100%
4	Parallel Computing	Offering 3 courses per elective	
Elective Courses - 5			
1	System Simulation and Modeling	Web Services*	100%
2	Principles of User Interface Design	Internet of Things (offered in IV semester in VTU curriculum)	10%
3	Software Architecture	Block Chain Technology*	100%
4	Storage Area Networks	Offering 3 courses per elective	

\* - introducing new elective course

  
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**Department: MCA**

**Dr. AIT Curriculum Deviation from VTU (Semester VI)**

S.No	VTU Curriculum	Dr. AIT Curriculum	% of deviation
1	Internship	Internship & Seminar (Industry Internship is evaluated in the V Semester)	0%
2	Seminar	-	-
3	Major Project	Project Work	0%
4.		Research Methodology*	100%

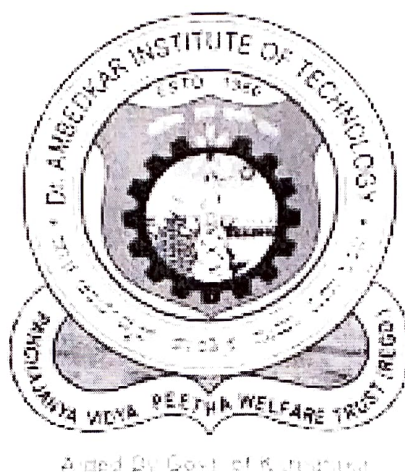
\*- introducing new core course

*L. Manjuna*  
19/6/2018  
**Dr. L. MANJUNATHA RAO**  
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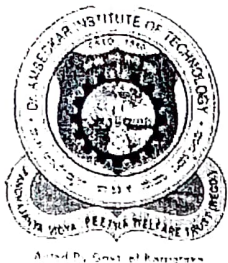
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## **BOARD OF STUDIES**

**Held on 30<sup>th</sup> March 2017**

- 1. BoS Meeting Proceedings**
- 2. Revision & Finalisation of Scheme & Syllabus of I to VI Semester (2016-19 Scheme)**



**Dr. Ambedkar Institute of Technology, Bengaluru-56**  
 (An Autonomous Institute, Affiliated to V T U, Belagavi)  
**Master of Computer Applications (MCA)**

**MINUTES OF BOARD OF STUDIES MEETING – MCA BOARD**  
**VENUE : MCA Department**

30th March 2017.

The Board of Studies meeting in MCA Course of Dr. Ambedkar Institute of Technology was held on 30<sup>th</sup> of March 2017 in the Department of M.C.A., Dr. AIT Campus, Bengaluru.

The following are the members of BoS meeting

Sl. No	Category	Nomination of the Committee	Name of the Person
1	Head of the Department	Chairperson	Dr. L.Manjunatha . Rao Prof. & Head, Dept. of M.C.A Dr. A.I.T,Bangalore-56 e-mail: manjuarjun2004@yahoo.com Mob: 9341214327
2.	Experts from outside college nominated by VTU	Member	Dr. K.S. Shreedhara. Professor Dept of Computer Science and Engineering UBDT College, Davanagere. Mob: 9448009306 Mailid: ks_shreedhara@yahoo.com
2	Internal Faculty members with various specializations	Member-1	Dr. Chandrakanth. G. Pujari Associate Professor Dept. of M.C.A Dr. A.I.T,Bangalore-56 e-mail: varuncp@rediffmail.com Mob: 9845380013
		Member-2	Dr. Bharathi.S Associate Professor Dept. of M.C.A Dr. A.I.T,Bangalore-56 e-mail: bharathishivu_s@yahoo.co.in Mob: 9902084476
		Member-3	Dr. Indumathi. S. K Associate Professor, Dept. of M.C.A Dr. A.I.T,Bangalore-56 e-mail: indukarthik2009@yahoo.in Mob: 9739910995
3	Subject Experts from outside the college nominated by academic council	Member-1	Dr. Kavya. N. P Prof & Head Dept. of M.C.A RNSIT, Bangalore e-mail: npkavya@yahoo.com mob: 9945275345
		Member-2	Dr. Poornima Nataraj Prof & Head Dept. of M.C.A DSCE, Bangalore e-mail: hod-mcavtu@dayanandasagar.edu mob: 9901644101

Sl. No	Category	Nomination of the Committee	Name of the Person
4	Representative from industry/Corporate sector/allied area relating to placement nominated by academic council	Member-1	Mr. Ravinandan Temminova Technologies Private Ltd. Mahalakshmi Layout Bengaluru-86 Email:ravinandan.me@gmail.com Mob:9902000779
5	Representative from industry/Corporate sector/allied area relating to placement nominated by academic council	Member-2	Mr. Babu Rao Senior Engineering Project Manager Aricent Technologies Bengaluru E mail:babu.damera@aricent.com Mob:
6	Post graduate meritorious alumnus nominated by Principal	Member	Mr. Bhaskar Assistant Professor Maharanis Science College Palace Road, Bengaluru-1. Mob:9845382114
7	Special Invitees	Member-1	Ms. Shobha Rani. B.R Associate Professor, Dept. of M.C.A Dr. A.I.T,Bangalore-56 e-mail: shobhakrishna8@gmail.com Mob: 9740098198
		Member-2	Ms. Malathi. P Assistant Professor, Dept. of M.C.A Dr. A.I.T,Bangalore-56 e-mail: bfgcpm@rediffmail.com Mob: 7760880325

**The Board of Studies recommends the syllabus for MCA Programme for the academic year 2017-18 with the following suggestions through deliberations:**

1. Proposed the detailed syllabus for all 6 semesters of MCA program as per CBCS from the academic year 2016 - 2017 by finalizing the core and elective subjects with respect to current industry and all stake holders' requirements (as per the guide lines of ACM, IEEE - Computer Society of India and NBA).
2. the syllabus has been framed with equal weightage of credits to the three components: core academics, industry requirement, and research orientation
3. Electives are offered in the light of new advancements in the field of information technology.
4. Proposed credit weightage for various components like lectures, tutorials, practicals, seminars, mini project and Major project for each course.
5. Credits for curriculum components in Master of Computer Applications programme are allotted (mathematics, management, humanities, professional core, electives, project work, and seminar) as per VTU guidelines.
6. Proposed the Scheme of Teaching and Examination for all six semesters of MCA programme
7. Proposed the Course Outcomes (COs) as per the Outcome Based Education of NBA.
8. The BoS has recommended the detailed syllabus, rules and regulations, scheme of teaching and examination for all the six semesters.
9. The BoS suggested to have a discussion with faculty members who had handled 1 semester to understand the difficulties if any in the syllabus or lab conduction.
10. The BoS made the following recommendations

- 2 hours of lab session and 1 hour of tutorial for a computer networks (MCA31) totaling to 2 credits in semester 3.
- ADA(MCA33) will have a credit of 1.5
- Exclusive seminar component to be removed in the III semester
- Elective Fuzzy Logic to be replaced with Artificial Intelligence (MCA442)
- Machine Learning (MCA444) can be introduced as an elective
- Fuzzy Logic can be merged within Machine Learning (MCA444) and can be introduced as a pre-requisite for Internet of Things (MCA544).
- Software Design Lab (MCA156) can have 1.5 credits and 2 credits for Mobile Applications
- Internship and seminar (MCA62) marks to be increased to 100
- Project Work Dissertation (MCA63) will be evaluated for 150 marks in the external
- Project Work (MCA63) viva will be evaluated for 100 marks

11. The BoS has recommended the I to VI semester MCA syllabus

12. The Syllabus was finalized by incorporating all the suggestions made by the honorable members.

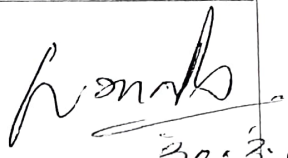


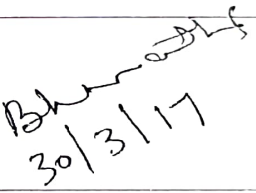
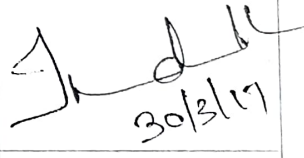

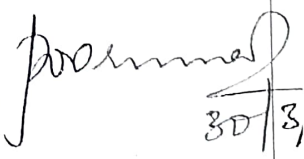
**The BoS meeting was concluded with vote of thanks address by the chairman.**

  
HOD  
MASTER OF COMPUTER APPLICATIONS  
Dr. AMBEDKAR INSTITUTE OF TECHNOLOGY  
BANGALORE-560 056



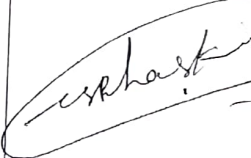
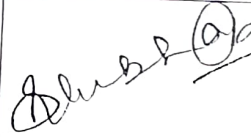
**BOARD OF STUDIES MEETING – MCA BOARD**

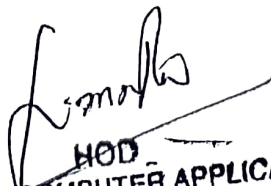
**Signature of Participants**

Sl. No	Category	Nomination of the Committee	Name of the Person	Signature
1	Professor and Head of the Department	Chairperson	Dr. L.Manjunatha . Rao Prof. & Head, Dept. of M.C.A Dr. A.I.T,Bangalore-56 e-mail: manjuarjun2004@yahoo.com Mob: 9341214327	 30.3.17
2	Experts from outside college nominated by VFU	Member	Dr. K.S. Shreedhara Professor Dept of Computer Science and Engineering UBDT College, Davanagere Mob: 9448009306 Mailid: ks_shreedhara@yahoo.com	
3	Internal Faculty members with various specializations	Member-1	Dr. Chandrakanth. G. Pujari Associate Professor Dept. of M.C.A Dr. A.I.T,Bangalore-56 e-mail: varuncp@rediffmail.com Mob: 9845380013	
		Member-2	Dr. Bharathi.S Associate Professor Dept. of M.C.A Dr. A.I.T,Bangalore-56 e-mail: bharathishivu_s@yahoo.co.in Mob: 9902084476	 30/3/17
		Member-3	Dr. Indumathi. S.K Associate Professor, Dept. of M.C.A Dr. A.I.T,Bangalore-56 e-mail: indukarthik2009@yahoo.in Mob: 9739910995	 30/3/17
4	Subject Experts from outside the college nominated by academic council	Member-1	Dr. Kavya. N. P Prof & Head Dept. of M.C.A RNSIT, Bangalore e-mail: npkavya@yahoo.com mob: 9945275345	 30/3/17
		Member-2	Dr. Poornima Nataraja Prof & Head Dept. of M.C.A DSCE, Bangalore e-mail: hod- mcavtu@dayanandasagar.edu mob: 9901644101	 30/3/17

**BOARD OF STUDIES MEETING – MCA BOARD**

**Signature of Participants**

Sl. No	Category	Nomination of the Committee	Name of the Person	Signature
5	Representative from industry/Corporate sector/allied area relating to placement nominated by academic council	Member-1	Mr. Ravinandan Temminova Technologies Private Ltd. Mahalakshmi Layout Bengaluru-86 Email:ravinandan.me@gmail.com Mob:9902000779	Absent
6	Representative from industry/Corporate sector/allied area relating to placement nominated by academic council	Member-2	Mr. Babu Rao Senior Engineering Project Manager Aricent Technologies Bengaluru E mail:babu.damera@aricent.com Mob:	Absent
7	Post graduate meritorious alumnus nominated by Principal	Member	Mr. Bhaskar . H . S Assistant Professor Maharanis Science College Palace Road, Bengaluru-1 Mob:9845382114	
8	Special Invitees	Member-1	Ms. Shobha Rani. B.R Associate Professor, Dept. of M.C.A Dr. A.I.T,Bangalore-56 e-mail: shobhakrishna8@gmail.com Mob: 9740098198	
		Member-2	Ms. Malathi. P Assistant Professor, Dept. of M.C.A Dr. A.I.T,Bangalore-56 e-mail: bfgcpm@rediffmail.com Mob: 7760880325	P. Malathi

  
**HOD**  
**MASTER OF COMPUTER APPLICATIONS**  
**Dr. AMBEDKAR INSTITUTE OF TECHNOLOGY**  
**BANGALORE-560 056**

		I Semester							
Subject Code	Name of the Subject	Credits			Total Credits	Exam Duration in Hours	Marks		Total Marks
		Lecture	Tutorial	Practicals			CIE	SEE	
MCA11	Data structures using C	4	--	-	4	3	30	70	100
MCA12	Unix Programming	4	--	-	4	3	30	70	100
MCA13	Web Technologies	4	--	-	4	3	30	70	100
MCA14	Computer Organization	4	--	-	4	3	30	70	100
MCA15	Discrete Mathematical Structures	4	--	-	4	3	30	70	100
MCAL16	Data structures using C Lab	--		1.5	1.5	3	50	50	100
MCAL17	Unix Programming Lab	--		1.5	1.5	3	50	50	100
MCAL18	Web Programming Lab	--		2	2	3	50	50	100
Total		20	-	5	25	24	300	500	800

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P. Malhari  
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		II Semester							
Subject Code	Name of the Subject	Credits			Total Credits	Exam Duration in Hours	Marks		Total Marks
		Lecture	Tutorial	Practicals			CIE	SEE	
MCA21	Python Programming	4	--	-	4	3	30	70	100
MCA22	Object oriented programming using C++	4	--	-	4	3	30	70	100
MCA23	Database Management Systems	4	--	-	4	3	30	70	100
MCA24	Operating Systems	4	--	-	4	3	30	70	100
MCA25	Professional Communication & Ethics	4	--	-	4	3	30	70	100
MCAL26	Python Programming Lab	--		2	2	3	50	50	100
MCAL27	Object oriented programming using C++ lab	--		1.5	1.5	3	50	50	100
MCAL28	DBMS Lab	--		1.5	1.5	3	50	50	100
<b>Total</b>		<b>20</b>	<b>-</b>	<b>5</b>	<b>25</b>	<b>24</b>	<b>300</b>	<b>500</b>	<b>800</b>

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		III Semester							
Subject Code	Name of the Subject	Credits			Total Credits	Exam Duration in Hours	Marks		Total Marks
		Lecture	Seminar	Practicals			CIE	SEE	
MCA31	Computer Networks	4	--	-	4	3	30	70	100
MCA32	Java Programming	4	--	-	4	3	30	70	100
MCA33	Analysis and Design of Algorithms	4	--	-	4	3	30	70	100
MCA34	Software Engineering	4	--	-	4	3	30	70	100
MCA35	Elective -1	4	--	-	4	3	30	70	100
MCAL36	Computer Networks Lab	--		2	2	3	50	50	100
MCAL37	Java Programming Lab	--		1.5	1.5	3	50	50	100
MCAL38	Analysis and Design of Algorithms Lab	--		1.5	1.5	3	50	50	100
MCAS39	Seminar on ICT		1		1	-	50	-	50
<b>Total</b>		<b>20</b>	<b>-</b>	<b>5</b>	<b>25</b>	<b>24</b>	<b>300</b>	<b>500</b>	<b>800</b>

*Kondra*  
*Prasanna* 30/3/17  
*Deep* 30/3/17  
*Prakash* 30/3/17  
*Shubh* 30/3/17  
*Pr. Melethri* 30/3/17

		IV Semester							
Subject Code	Name of the Subject	Credits				Exam Duration in Hours	Marks		Total Marks
		Lecture	Tutorial	Practicals	Total Credits		CIE	SEE	
MCA41	Advanced Java Programming	4	--	-	4	3	30	70	100
MCA42	Software Testing and Practices	4	--	-	4	3	30	70	100
MCA43	Advanced Web Programming	4	--	-	4	3	30	70	100
MCA44	Elective-2	4	--	-	4	3	30	70	100
MCA45	Management Elective-3	4	--	-	4	3	30	70	100
MCAL46	Advanced Java Programming Lab	--		2	2	3	50	50	100
MCAL47	Software Testing Lab	--		1.5	1.5	3	50	50	100
MCAL48	Web based Mini Project-1	--		1.5	1.5	3	50	50	100
<b>Total</b>		<b>20</b>	<b>-</b>	<b>5</b>	<b>25</b>	<b>24</b>	<b>300</b>	<b>500</b>	<b>800</b>

ELECTIVE-2		MANAGEMENT ELECTIVE-3	
MCA441	Data Warehousing & Mining	MCA451	Software Project Management
MCA442	Artificial Intelligence	MCA452	Supply Chain Management
MCA443	Software Architecture	MCA453	Enterprise Resource Planning
MCA444	Machine Learning	MCA454	E-commerce and Management Information System

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ELECTIVE-1	
MCA351	Intellectual Property Rights
MCA352	Cyber Security
MCA353	Operations Research
MCA354	Data Analysis using Spread Sheets

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Asphark  
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Jeeva  
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gmi  
 30/3/17

Indu

G. Subhakar

P. M. Lebsi  
 30/3/17

V Semester

Subject Code	Name of the Subject	Credits				Exam Duration in Hours	Marks		Total Marks	
		Lecture	Tutorial	Practicals	Total Credits		CIE	SEE		
					4	3	30	70	100	
MCA51	Object-Oriented Modeling and Design Patterns	4	--	-	4	3	30	70	100	
MCA52	Programming Using C# & .NET	4	--	-	4	3	30	70	100	
MCA53	Mobile Applications	4	--	-	4	3	30	70	100	
MCA54	Elective-4	4	--	-	4	3	30	70	100	
MCA55	Elective-5	4	--	-	4	3	30	70	100	
MCAL56	Software Design Laboratory	--			1.5	1.5	3	50	50	100
MCAL57	.Net Laboratory	--			1.5	1.5	3	50	50	100
MCAL58	Mini Project : (Mobile Applications Development using Android/iOS/Windows etc.,)	--			2.0	2.0	3	50	50	100
Total		20	-	-	5	25	24	300	500	800

ELECTIVE-4		ELECTIVE-5	
MCA541	Cloud Computing	MCA551	Storage Area Networks
MCA542	Web Engineering	MCA552	Mobile And Adhoc Sensor Networks
MCA543	Service Oriented Architecture	MCA553	Cyber Security
MCA544	Internet of Things	MCA554	Big Data Analytics
MCA545	System Simulation & Modelling	MCA555	Software Defined Networks

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VI Semester							
Subject Code	Name of the Subject	Internal	External	Dissertation Evaluation	Viva	Total Marks	Credits
MCA61	Research Methodology	30	70	-		100	2
MCA62	Internship & Seminar	100	-			100	3
MCA63	Project Work	50	-	150	100	300	20
Total		180	70	150	100	500	25
Grand Total (I to VI Semesters): 4500 Marks : 150 Credits							

## Guidelines:

### MCA61: Research Methodology

- Every week students have to attend two hrs class on research methodology.
- Student should pass the subject at the end of the semester.

### MCA62: Internship

- The students shall undergo internship for 6 weeks during the vacation immediately after the 5<sup>th</sup> semester examination.
- The internship shall be carried out in industry/R&D labs or institutions.
- Internship should be presented along with the report by the end of 6 weeks and shall be evaluated by the internal panel for 100 marks.
- Student should give a seminar on the internship topic.

### MCA63: Project Work

#### Synopsis

- Synopsis of the project must be submitted before the end of the first month of 6<sup>th</sup> semester
- The synopsis of the project must include:
  - a) Problem formulation and literature survey.
  - b) Details of the required tools and technologies for the development of project.
  - c) Write up shall not exceed 15 pages.
- Internal assessment for synopsis presentation and evaluation of the synopsis by the internal examiner/guide is for 50 marks.

Dissertation:

- The project shall be carried out in the same institution or in industry/R&D labs based on software tools and technologies learnt in MCA course/internship for minimum period of 16 weeks.
- Internal assessment shall be evaluated by the internal panel/guide for 50 marks.
- For continuous evaluation of project work by the internal examiner/guide with progress reports is for 10 marks each. ( 3 progress reports x 10 marks= 30)
- Final presentation for the entire project is evaluated for 20 marks.
- The internal examiners (Project Guide with at least 2 years of experience) and the external examiners shall be appointed by the authorities of the college for the final evaluation of the project.
- Internal and external examiners shall carry out the evaluation of Dissertation report for 150 marks individually. The average of the marks allotted by the internal and external examiners shall be the final marks for the project Dissertation report evaluation.
- The project presentation and Viva-voce shall be evaluated jointly by both the internal and external examiners for 100 marks.
- The student should be encouraged to present/publish the part/outcome of the project as an article in the conferences/journals.

*Prof. S. S. Srinivas*  
30/3/17  
*Prof. S. S. Srinivas*  
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*Prof. S. S. Srinivas*  
30/3/17

*Dr. S. S. Srinivas*  
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*Dr. S. S. Srinivas*  
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*Dr. S. S. Srinivas*  
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*Dr. S. S. Srinivas*  
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*Dr. S. S. Srinivas*