

Circular file

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**DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY****CIRCULAR NO.SU/BCA/CBC & GS/15/2018**

In Supersession of the Circular No. Su/BCA/CBC & GS/12/2018 18062-312 dated 20-8-2018 along with the syllabi of first to third year. It is further informed to all concerned that, **As decided by the Academic Council held on 30-06/02-07-2018 the syllabi of BCA Ist Year, Semester Ist as circulated earlier vide No.su/2018/14151-551 dated 17-07-2018 is remained unchanged and uploaded on the University web site [www.bamu.ac.in](http://www.bamu.ac.in).**

This is effective from the Academic Year 2018-2019 and onwards

Kindly take a note of this circular and bring notice to the students, teachers and staff for their information and necessary action.

University Campus,  
Aurangabad-431 004.

REF.NO.SU/MGT/2018-19/ 18358 - 18608

Date:- 31-08-2018.

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*[Handwritten Signature]*  
**Deputy Registrar,  
Syllabus Section.**

**Copy forwarded with compliments to :-**

- 1] **The Principals, affiliated concerned Colleges, Dr. Babasaheb Ambedkar Marathwada University.**
- 2] **The Director, University Network & Information Centre, UNIC, with a request to upload this Circular on University Website.**

**Copy to :-**

- 1] The Director, Board of Examinations & Evaluation,
- 2] **The Section Officer, [ B.Com.Unit ] Examination Branch,**
- 3] The Section officer, [Eligibility Unit],
- 4] **The Programmer [Computer Unit-1] Examinations,**
- 5] **The Programmer [Computer Unit-2] Examinations,**
- 6] The In-charge, [E-Suvidha Kendra],
- 7] The Public Relation Officer,
- 8] The Record Keeper,

- 27 -

**D.R. BABASAHEB AMBEDKAR  
MARATHWADA UNIVERSITY,  
AURANGABAD.**



Curriculum of

BACHELOR OF COMPUTER APPLICATION

(BCA)

1ST YEAR

under Choice Based Credit & Grading System

SEMESTER FIRST

*[ Effective from the Academic Year 2018-19 & onwards ]*

**DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY, AURANGABAD.****FACULTY OF MANAGEMENT SCIENCE.****Syllabus - Bachelor of Computer Application (BCA)****Choice Based Credit System (CBCS) - 2018-19**

<b>Semester &amp; Credits</b>	<b>Core Course [04]</b>	<b>Ability Enhancement Compulsory Courses [AEC] [01]</b>	<b>Discipline Specific Elective [DSE] [01]</b>
<b>I Credit 24</b>	1. Accountancy – I 2. Industrial Economics 3. Business Statistics 4. Operating System – I	1. Communication Skills	Elective Paper [Any One] 1. Office Automation Tools 2. Basic Web Technology - I
<b>Total Credits 24</b>	<b>No. of Credits : 16</b>	<b>No. of Credits :04</b>	<b>No. of Credits : 04</b>



**FIRST SEMISTER**

Paper Number	Subject/ Title of the Paper	Course	Weekly		Credits		IA	UA	Total Marks	Duration of Theory Exam
			Th	Pr	Th	Pr				
I	Financial Accounting – I	Core Course	4	-	4	-	20	80	100	3 Hrs
II	Industrial Economics	Core Course	4	-	4	-	20	80	100	3 Hrs
III	Business Statistics	Core Course	4	-	4	-	20	80	100	3 Hrs
IV	Operating System – I	Core Course	2	4	2	2	20	80	100	3 Hrs
V	Business Communication	Ability Enhancement Compulsory	4	-	4	-	20	80	100	3 Hrs
VI	1.Office Automation Tools 2.Basic Web Technology –I	Discipline Specific Elective [Any One]	2	4	2	2	20	80	100	3 Hrs
	Total		20	8	20 + 4 =24		120	480	600	--

Circular file

- 31 -

**DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY****CIRCULAR NO.SU/Commerce & Management/ II Sem./32/2018**

It is hereby inform to all concerned that, on the recommendation of the Dean, Faculty of Commerce & Management, the Hon'ble Vice-Chancellor in his emergency powers under Section-12(7) of the Maharashtra Public Universities Act, 2016 has accepted the syllabus of **B.Com., BBA & BCA II Sem.** on behalf of the Academic Council\_ to be applied from the Academic Year 2018-2019 and onwards.


All concerned are requested to note the contents of this circular and bring notice to the students, teachers and staff for their information and necessary action.

University Campus,  
Aurangabad-431 004.  
REF.NO. SU/ COMMERCE/2018-19.

Date:- 26-11-2018.

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**Deputy Registrar,**  
**Syllabus Section.**

**Copy forwarded with compliments to :-**

- 1] **The Principals, affiliated concerned Colleges, Dr. Babasaheb Ambedkar Marathwada University.**
- 2] The Director, University Network & Information Centre, UNIC, with **a request to upload this Circular on University Website.**

**Copy to :-**

- 1] The Director, Board of Examination & Evaluation,
- 2] **The Section Officer, [ B.Com. Unit ] Examination Branch,**
- 3] The Section officer, [Eligibility Unit],
- 4] **The Programmer [Computer Unit-1] Examinations,**
- 5] **The Programmer [Computer Unit-2] Examinations,**
- 6] The In-charge, [E-Suvidha Kendra], Rajarshi Shahu Maharaj Pariksha Bhavan, Dr. Babasaheb Ambekar Marathwada University.
- 7] The Public Relation Officer,
- 8] The Record Keeper.

**DR. BABASAHEB AMBEDKAR  
MARATHWADA UNIVERSITY,  
AURANGABAD.**



**Curriculum of**  
**BACHELOR OF COMPUTER APPLICATION**  
**(BCA)**  
**1ST YEAR**  
**SECOND SEMESTER**  
**under Choice Based Credit & Grading System**

*[ Effective from the Academic Year 2018-19 & onwards ]*

**FACULTY OF COMMERCE & MANAGEMENT .**

Structure - Bachelor of Computer Application (BCA)

Choice Based Credit System (CBCS) - 2018-19

<b>Semester &amp; Credits</b>	<b>Core Course [24]</b>	<b>Ability Enhancement Compulsory Courses [AEC] [6]</b>	<b>Discipline Specific Elective [DSE] [6]</b>
I Credit 24	1. Financial Accounting – I 2. Industrial Economics 3. Operating System – I 4. Business Statistics	1. Business Communication	Elective Paper [Any I] 1. Office Automation Tools 2. Basic Web Technology - I
II Credit 24	1. Financial Accountancy – II 2. Programming in C 3. Operating System – II (LINUX) 4. Business Mathematics	1. Industrial Organisation	Elective Paper [Any One] 1. UNIX Operating System II 2. Basic Web Technology - II
III Credit 24	1. Principles of Management 2. OPSS using C++ 3. Business Law - I 4. DBMS	1. E-Business Essentials	Elective Paper [Any One] 1. Data Structure & Algorithm 2. RDBMS using ORACLE
IV Credit 24	1. Cost Accountancy 2. Java Programming 3. MIS & DSS 4. Business Law – II	1. Entrepreneurship Development	Elective Paper [Any One] 1. PC Maintenance 2. Advance Networking
V Credit 24	1. Management Accounting 2. SQL 2017 3. VB 4. Organisational Behaviour	1. Software Engineering	Elective Paper [Any One] 1. Banking & Insurance 2. Retail Management
VI Credit 24	1. Elements of Commercial Portals (HTML 5) 2. Android 9 3. Business Law III 4. Project	1. Software Testing	Elective Paper [Any One] 1. Services Marketing 2. Export Management
<b>Total Credits 144</b>	<b>No. of Credits : 96</b>	<b>No. of Credits : 24</b>	<b>No. of Credits : 24</b>

**DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY, AURANGABAD.****FACULTY OF MANAGEMENT SCIENCE.**

Syllabus - Bachelor of Computer Application (BCA)

Choice Based Credit System (CBCS) - 2018-19

<b>Semester &amp; Credits</b>	<b>Core Course [04]</b>	<b>Ability Enhancement Compulsory Courses [AEC] [01]</b>	<b>Discipline Specific Elective [DSE] [01]</b>
<b>II Credit 24</b>	1. Accountancy – II 2. Industrial Organisation 3. Mathematics 4. Programming in C	1. Principles of Management	Elective Paper [Any One] 1. Operating System – II (UNIX) 2. Basic Web Technology - II
<b>Total Credits 24</b>	<b>No. of Credits : 16</b>	<b>No. of Credits :04</b>	<b>No. of Credits : 04</b>





## SECOND SEMESTER

Paper Number	Subject/ Title of the Paper	Course	Weekly		Credits		IA	UA	Total Marks	Duration of Theory Exam
			Th	Pr	Th	Pr				
VII	Accountancy – II	Core Course	4	-	4	-	20	80	100	3 Hrs
VIII	Industrial Organisation	Core Course	4	-	4	-	20	80	100	3 Hrs
IX	Mathematics	Core Course	4	-	4	-	20	80	100	3 Hrs
X	Programming in C	Core Course	2	4	2	2	20	80	100	3 Hrs
XI	Principles of Management	Ability Enhancement Compulsory	4	-	4	-	20	80	100	3 Hrs
XII	1.Operating System- II (UNIX) 2.Basic Web Technology – II	Discipline Specific Elective [Any One]	2	4	2	2	20	80	100	3 Hrs
	<b>Total</b>		<b>20</b>	<b>8</b>	<b>20 + 4 = 24</b>		<b>120</b>	<b>480</b>	<b>600</b>	<b>---</b>

Circular file

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**DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY****CIRCULAR NO.SU/Commerce & Management/ III Sem./50/2019**

It is hereby inform to all concerned that, on the recommendation of the Dean, Faculty of Commerce & Management, the Hon'ble Vice-Chancellor in his emergency powers under Section-12(7) of the Maharashtra Public Universities Act, 2016 has accepted the syllabi of **B.Com., BBA & BCA III Sem.** under Choice Based Credit and Grading System on behalf of the Academic Council to be applied from the Academic Year 2019-2020 and onwards. The said syllabi are uploaded on [bamu.ac.in](http://bamu.ac.in) at University website.

All concerned are requested to note the contents of this circular and bring notice to the students, teachers and staff for their information and necessary action.

University Campus,  
Aurangabad-431 004.  
REF.NO. SU/ COMMERCE/2018-19  
25445-844  
Date:- 31-05-2019.

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*Deputy Registrar,  
Syllabus Section.*

**Copy forwarded with compliments to :-**

- 1] **The Principals, affiliated concerned Colleges, Dr. Babasaheb Ambedkar Marathwada University.**
- 2] **The Director, University Network & Information Centre, UNIC, with a request to upload this Circular along with the said syllabi on University Website.**

**Copy to :-**

- 1] The Director, Board of Examination & Evaluation,
- 2] **The Section Officer, [ B.Com. Unit ] Examination Branch,**
- 3] **The Programmer [Computer Unit-1] Examinations,**
- 4] **The Programmer [Computer Unit-2] Examinations,**
- 5] The In-charge, [E-Suvidha Kendra], Rajarshi Shahu Maharaj Pariksha Bhavan, Dr. Babasaheb Ambedkar Marathwada University.
- 6] The Public Relation Officer,
- 7] The Record Keeper.

**D R. BABASAHEB AMBEDKAR  
MARATHWADA UNIVERSITY,  
AURANGABAD.**



Curriculum of

BACHELOR OF COMPUTER APPLICATION

(BCA)

IIND YEAR

THIRD SEMESTER

under Choice Based Credit & Grading System

*[ Effective from the Academic Year 2019-20 & onwards ]*

*[ Signatures and Dates ]*  
17/6/19  
17/6/19  
17/6/19

**DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY, AURANGABAD.**

**FACULTY OF COMMERCE & MANAGEMENT.**

Syllabus - Bachelor of Computer Application (BCA)

Choice Based Credit System (CBCS) - 2019-20

<b>Semester &amp; Credits</b>	<b>Core Course [04]</b>	<b>Ability Enhancement Compulsory Courses [AEC] [01]</b>	<b>Discipline Specific Elective [DSE] [01]</b>
III Credit 24	1. Principle of Management 2. OPSS using C++ 3. Business Law – I 4. DBMS	1. E-Business Essential	Elective Paper [Any One] 1. Data Structure & Algorithm 2. RDBMS using ORACLE
<b>Total Credits 24</b>	<b>No. of Credits : 16</b>	<b>No. of Credits :04</b>	<b>No. of Credits : 04</b>

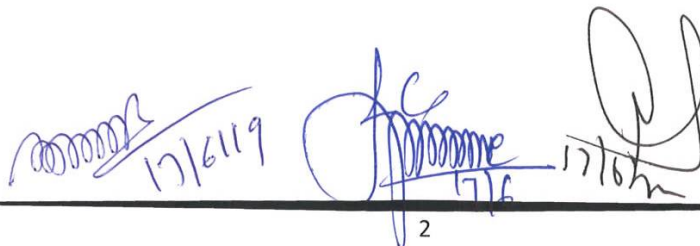
  
12/6/19

  
17/6

  
12/6/2019

**Structure of B. C. A. Third Semester**  
**Choice Based Credit Grading System ( CBCS ) 2019 - 2020**

Paper Number	Subject/ Title of the Paper	Course	Weekly		Credits		IA	UA	Total Marks	Duration of Theory Exam
			Th	Pr	Th	Pr				
XIII	Principles of Management	Core Course	4	-	4	-	20	80	100	3 Hrs
XIV	OPPS using C <sup>++</sup>	Core Course	2	2	2	2	50	50	100	2 Hrs
XV	Business Law – I	Core Course	4	-	4	-	20	80	100	3 Hrs
XVI	DBMS	Core Course	4	-	4	-	20	80	100	3 Hrs
XVII	E-Business Essential	Ability Enhancement Compulsory	4	-	4	-	20	80	100	3 Hrs
XVIII	1.Data Structure and Algorithm 2.RDBMS using ORACLE	Discipline Specific Elective [Any One]	2	2	2	2	50	50	100	2 Hrs
	<b>Total</b>		<b>20</b>	<b>4</b>	<b>20 + 4 = 24</b>		<b>120</b>	<b>480</b>	<b>600</b>	<b>--</b>


  
 17/6/19      17/6/19      17/6/19

Circular file

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**DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY****CIRCULAR NO.SU/Commerce & Management/ IV Sem./21/2019**

It is hereby inform to all concerned that, on the recommendation of the Dean, Faculty of Commerce & Management, the Hon'ble Vice-Chancellor in his emergency powers under section-12(7) of the Maharashtra Public Universities Act, 2016 has accepted the syllabi of **B.Com., BBA & BCA IV Sem.** under Choice Based Credit and Grading System on behalf of the Academic Council to be applied from the Academic Year 2019-2020 and onwards. The said syllabi are also available on bamu.ac.in on University website.

All concerned are requested to note the contents of this circular and bring notice to the students, teachers and staff for their information and necessary action.

University Campus,  
Aurangabad-431 004.

REF.NO. SU/ COMMERCE/2019-20

4388-4638

Date:- 15-11-2019.

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*Deputy Registrar,  
Syllabus Section.*

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- 1] **The Principals, affiliated concerned Colleges, Dr. Babasaheb Ambedkar Marathwada University.**
- 2] **The Director, University Network & Information Centre, UNIC, with a request to upload this Circular along with the said syllabi on University Website.**

**Copy to :-**

- 1] The Director, Board of Examination & Evaluation,
- 2] **The Section Officer, [ B.Com. Unit ] Examination Branch,**
- 3] **The Programmer [Computer Unit-1] Examinations,**
- 4] **The Programmer [Computer Unit-2] Examinations,**
- 5] The In-charge, [E-Suvidha Kendra], Rajarshi Shahu Maharaj Pariksha Bhavan, Dr. Babasaheb Ambekar Marathwada University.
- 6] The Public Relation Officer,
- 7] The Record Keeper.

**DR. BABASAHEB AMBEDKAR  
MARATHWADA UNIVERSITY,  
AURANGABAD.**



**Curriculum of**

**BACHELOR OF COMPUTER APPLICATION**

**(BCA)**

**IIIND YEAR**

**FOURTH SEMESTER**

**under Choice Based Credit & Grading System**

*[ Effective from the Academic Year 2019-20 & onwards ]*


**DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY, AURANGABAD.****FACULTY OF COMMERCE & MANAGEMENT.**

Syllabus - Bachelor of Computer Application (BCA)

Choice Based Credit System (CBCS) - 2019-20

Semester & Credits	Core Course [04]	Ability Enhancement Compulsory Courses [AEC] [01]	Discipline Specific Elective [DSE] [01]
IV Credit 24	1. Cost Accountancy 2. Java Programming 3. MIS & DSS 4. Business Law – II	1. Entrepreneurship Development	Elective Paper [Any One] 1. PC Maintenance <b>OR</b> 2. Advance Networking
<b>Total Credits</b> 24	<b>No. of Credits : 16</b>	<b>No. of Credits :04</b>	<b>No. of Credits : 04</b>

  
Dean

  
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Chairman

  
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Chairman

  
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Chairman.

  
BOS  
Chairman



### Structure of B. C. A. Fourth Semester (CBCS) 2019 - 20

Paper Number	Subject/ Title of the Paper	Course	Weekly		Credits		IA	UA	Total Marks	Duration of Theory Exam
			Th	Pr	Th	Pr				
XIX	Cost Accountancy	Core Course	4	-	4	-	20	80	100	3 Hrs
XX	Java Programming	Core Course (Theory)	3	-	2	-	-	50	50	2 Hrs
		Practical	-	1	-	2	-	50	50	2 Hrs
XXI	MIS & DSS	Core Course	4	-	4	-	20	80	100	3 Hrs
XXII	Business Law – II	Core Course	4	-	4	-	20	80	100	3 Hrs
XXIII	Entrepreneurship Development	Ability Enhancement Compulsory	4	-	4	-	20	80	100	3 Hrs
XXIV	1.PC Maintenance <b>OR</b> 2.Advanced Networking	Discipline Specific Elective [Any One] (Theory)	3	-	2	-	-	50	50	2 Hrs
		Practical	-	1	-	2	-	50	50	2 Hrs
<b>Total</b>			<b>22</b>	<b>02</b>	<b>20 + 4 = 24</b>		<b>80</b>	<b>520</b>	<b>600</b>	<b>--</b>

\*Note:- As per UGC norms one theory lecture is equal to two practicals.

**DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY****CIRCULAR NO.SU/Commerce & Management/ V Sem./00/2020**

It is hereby inform to all concerned that, on the recommendation of the Dean, Faculty of Commerce & Management, the Hon'ble Vice-Chancellor in his emergency powers under section-12(7) of the Maharashtra Public Universities Act, 2016 has accepted the syllabi of **B.Com., BBA & BCA V Sem. & MPM I Sem.** under Choice Based Credit and Grading System on behalf of the Academic Council to be applied from the Academic Year 2020-2021 and onwards. The said syllabi are also available on bamu.ac.in on University website.

All concerned are requested to note the contents of this circular and bring notice to the students, teachers and staff for their information and necessary action.

University Campus,  
Aurangabad-431 004.

REF.NO. SU/ COMMERCE/2020-21/

13429-38\*

Date:- 20-07-2020.

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Deputy Registrar,  
Syllabus Section.

**Copy forwarded with compliments to :-**

- 1] **The Principals, affiliated concerned Colleges, Dr. Babasaheb Ambedkar Marathwada University.**
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- 3] **The Programmer [Computer Unit-1] Examinations,**
- 4] **The Programmer [Computer Unit-2] Examinations,**
- 5] The In-charge, [E-Suvidha Kendra], Rajarshi Shahu Maharaj Pariksha Bhavan, Dr. Babasaheb Ambedkar Marathwada University.
- 6] The Public Relation Officer,
- 7] The Record Keeper.

**DR. BABASAHEB AMBEDKAR  
MARATHWADA UNIVERSITY,  
AURANGABAD.**



Curriculum of

BACHELOR OF COMPUTER APPLICATION

(BCA)

IIIIRD YEAR

FIFTH SEMESTER

under Choice Based Credit & Grading System

*[ Effective from the Academic Year 2020-21 & onwards ]*


DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY, AURANGABAD.


FACULTY OF COMMERCE & MANAGEMENT


Syllabus - Bachelor of Computer Application (BCA)


Choice Based Credit System (CBCS)

Semester & Credits	Core Course [04]	Ability Enhancement Compulsory Courses [AEC] [01]	Discipline Specific Elective [DSE] [01]
V Credit 24	1. Management Accounting 2. SQL 2017 3. VB 4. Organizational Behavior	1. Software Engineering	Elective Paper [Any One] 1. Banking & Insurance <b>OR</b> 2. Retail Management
Total Credits 24	No. of Credits : 16	No. of Credits : 04	No. of Credits : 04

  
07/07/2020  
Prof. W.K. Sarwade  
(Dean + BOS Chairman)

  
07/07/2020  
Prof. Syed Azharuddin  
(Chairman BOS)

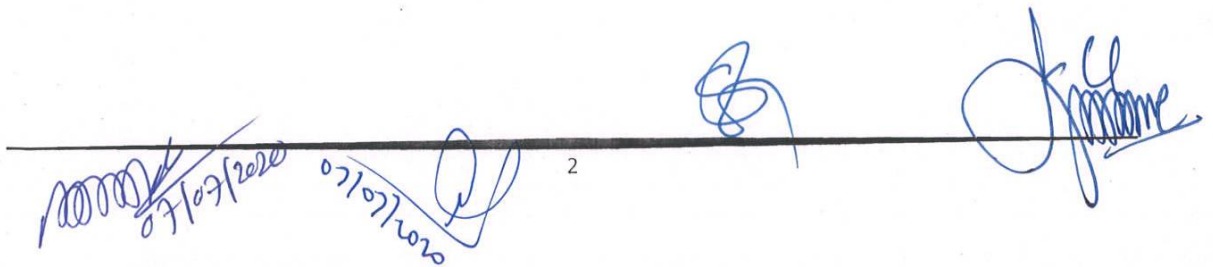
  
Prof. Satyaprem Ghumre  
(Chairman BOS)

  
Dr. Kishor Salve  
(Chairman BOS)

Structure of B. C. A. Fifth Semester

Choice Based Credit Grading System (CBCS) 2020 - 21

Paper Number	Subject/ Title of the Paper	Course	Weekly		Credits		IA	UA	Total Marks	Duration of Theory Exam
			Th	Pr	Th	Pr				
XXV	Management Accounting	Core Course	4	-	4	-	20	80	100	3 Hrs
XXVI	SQL 2017	Core Course	4	-	4	-	20	80	100	3 Hrs
XXVII	VB	Core Course	4	-	4	-	20	80	100	3 Hrs
XXVIII	Organizational Behavior	Core Course	4	-	4	-	20	80	100	3 Hrs
XXIX	Software Engineering	Ability Enhancement Compulsory	4	-	4	-	20	80	100	3 Hrs
XXX	1.Banking & Insurance OR 2.Retail Management	Discipline Specific Elective [Any One]	4	-	4	-	20	80	100	3 Hrs
	<b>Total</b>		<b>24</b>	<b>-</b>	<b>24</b>	<b>-</b>	<b>120</b>	<b>480</b>	<b>600</b>	<b>--</b>


  
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**B.C.A. V<sup>th</sup> Semester Syllabus (CBCS)**  
**Paper No. XXV – Management Accounting**

**Theory – 80 Marks**  
**Sessional – 20 Marks**

	<b>No. of Lectures</b>
<b>Unit I</b>	<b>10</b>
<b>Introduction to Management Accounting:</b> Meaning, Definition, Features, Scope, Importance and Functions of Management Account. Differences between Management Accounting, Financial Accounting and Cost Accounting. Advantages and Limitations of Management Account. <b>(Theory only)</b>	
<b>Unit II</b>	<b>08</b>
<b>Analysis and Interpretation of Financial Statements:</b> Meaning, Definition, Objectives, Scope of Financial Statements. Financial Statement Analysis, Tools of Financial Statements Analysis - Comparative financial statement, Common size financial statement, Trend Analysis. <b>(Theory only)</b>	
<b>Unit III</b>	<b>14</b>
<b>Ratio Analysis:</b> Meaning, Advantages, Limitations, and Classification of ratios. Gross Profit Ratio, Net Profit Ratio, Return on Capital Employed Ratio, Inventory Turnover Ratio, Debtors & Credit Turnover Ratio, Current Ratio, Liquid Ratio, Proprietary Ratio. <b>(Numeric only)</b>	
<b>Unit IV</b>	<b>14</b>
<b>Fund Flow Statement:</b> Meaning, Uses, Limitations, Sources and uses of funds. Funds from operations, Statement showing changes in working capital, Funds Flow Statement (Only in statement form), Preparation of necessary ledger accounts. <b>(Numeric only)</b>	
<b>Unit V</b>	<b>14</b>
<b>Cash Flow Statement</b> Cash Flow Statement as per revised accounting standard -3 in Statement Form <b>(Numeric only)</b>	
<b>Practical: 20 Marks (to be conducted by the department in each college as per convenience)</b> <b>Sessional Work: 20 Marks (Based on Unit II, III and IV)</b> 1. To Collect the Financial Statements of Companies published in News Papers (05 Companies). 2. Calculate Profitability and Financial Ratios (One case). 3. Prepare Statement of Changes in Working Capital and Funds Flow Statement (One Case) i. 10 Marks for above mentioned work. ii. 10 Marks for Group Discussion and Seminar	
<b>Reference Books :</b> 1. Dr. S.N. Maheshwari – Principles of Management Accounting, Sultan Chand & Sons, Delhi 2. Prof. A.P. Rao – Management Accounting – Everest Publishing House, New Delhi 3. Khan M.Y. & Jain P.K. - Management Accounting Tata McGraw-Hill Education 4. Dr. Jitendra Ahirrao - Management Accounting – Kailas Publications Aurangabad. 5. Dr. V.R. Nagori & Dr. Sanjay Agrawal - Management Accounting – Chinmay Publications Aurangabad.	

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B.C.A. V<sup>th</sup> Semester Syllabus (CBCS)  
Paper No. XXVI – SQL 2017

Total marks – 100

Theory – 80 Marks

Sessional – 20 Marks

		No. of Lectures
<b>Unit I</b>	<b>Introduction To DBMS:</b> Database Management System (DBMS) and Data Models. Introduction to Basic Database, Advantages of DBMS, Exploring Relational DBMS, Understanding Client and Server, Introduction to TSQL (Transact-Structured Query Language), History and Features of TSQL, Types Of TSQL Commands	12
<b>Unit II</b>	<b>Introduction to SQL Server:</b> Advantages and Drawbacks of SQL Server, Comparison between SQL Server and Oracle, Installation steps of Server, Connecting to Server, Server Type, Server Name, Authentication Modes, SQL Server Authentication Mode, Windows Authentication Mode, Login and Password, SQL Server Management Studio and Tools in Management Studio, Object Explorer, Object Explorer Details, Query Editor	12
<b>Unit III</b>	<b>Transaction Management:</b> Transaction Concepts, Begin Transaction, Commit Transaction, Rollback Transaction, Save Transaction, Role of Log File in Transaction Management, Implicit Transaction, Schedules.	12
<b>Unit IV</b>	<b>Concurrency Control :</b> Introduction Concurrency Control, Need for Concurrency, Locking Protocols, Transaction Recovery, Save Points Isolation Levels, SQL Facilities for Concurrency and Recovery.	12
<b>Unit V</b>	<b>File Structure and Indexing :</b> Operations on files, File of Unordered and ordered records, overview of File organizations, Indexing structures for files (Primary Index, Secondary Index, Clustering Index), Multilevel Indexing using B and B+ trees	12
	<b>Practical's U/A : 20 Marks</b>	
	1. Test/ Tutorial : 10 Marks	
	2. Oral / Writing of Algorithms in Journal / File : 10 Marks	
	<b>Reference Books :</b>	
	1. A Silberschatz, H Korth, S Sudarshan, "Database System and Concepts", fifth Edition McGraw-Hill.	
	2. R. Elmasri, S.B. Navathe, Fundamentals of Database Systems 6th Edition, Pearson Education, 2010.	
	3. Rob, Coronel, "Database Systems", Seventh Edition, Cengage Learning	
	4. C.J.Date, A.Kannan, S.Swamynathan, —An Introduction to Database SystemsI, Eighth Edition, Pearson Education, 2006.	
	5. Raghu Ramakrishnan, —Database Management Systems II, Fourth Edition, McGraw-Hill	
	6. G.K.Gupta, Database Management SystemsI", Tata McGraw Hill	
	7. Database Systems- A practical approach to Design, Implementation and Management by Thomos Connolly, Carolyn Begg, 3rd Edition, Pearson Education.	

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B.C.A. V<sup>th</sup> Semester Syllabus (CBCS)  
Paper No. XXVII – VB

Total - 100 marks

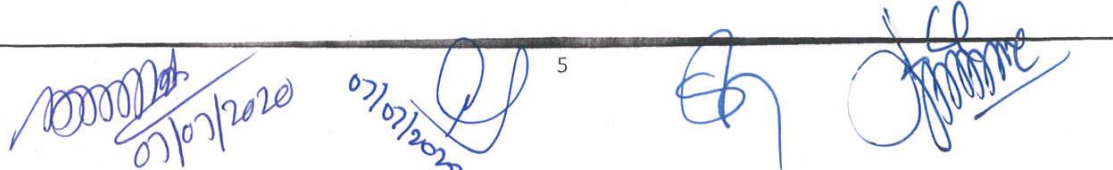
Visual Basic

Theory – 80 Marks  
Sessional – 20 Marks

		No. of Lectures
<b>Unit I</b>	<b>Introduction to Visual Basic :</b> Introduction, Integrated Development Environment Overview, Introduction Graphical User Interface (GUI), Programming Language (Procedural, Object Oriented, Event Driven), How to use VB, edition, installation	<b>10</b>
<b>Unit II</b>	<b>Introduction to Visual Basic Programming:</b> Introduction, Visual Programming and Event-Driven Programming, A Simple Program: Printing a Line of Text on the Form, Variables, Variables Public, Private, Static, Constants, Data Types, Naming, rules/conventions, Constants, Named & intrinsic, Declaring variables, Scope variables, Val Function, Arithmetic Operations, Formatting Data. Branching and Looping Statement: If , Select Case, Iterations :While, For, Until	<b>12</b>
<b>Unit III</b>	<b>Arrays and Procedures, Functions :</b> Types of array, control array, Built in and user defined function OOPs in VB : Classes, creating a new Class, Creating a new object using a class, choosing when to create New Objects, The Initialize & Terminate events, Inheritance. <b>Exception handling:</b> Introduction, When Error Handling Should be Used, A Simple Error-Handling Example: Divide by Zero, Nested on Error Statements, Error Object, and Resume Statement. Event handling: Mouse handling	<b>12</b>
<b>Unit IV</b>	<b>Basic Graphical User Interface Concepts:</b> Introduction to forms and Controls: Introduction, Creating , adding, removing Forms in project, Hide, Show Method, Load, Unload Statement, Me Keyword, Referring to Objects on a Different Forms. Adding controls on form Working with Properties and Methods of each Controls (Text Box Control, MaslEdit Control, Combo Box Control, List Box Control, Scrollbars, Slider Control, Menus, Pop-Up Menus, Function MsgBox), Creating an application <b>MENU :</b> Creating a menu system, Creating and accessing pop-up menu, Modifying menus at runtime, adding menu items at run-time, data access methods, creating, reading and writing text files	<b>14</b>
<b>Unit V</b>	Data Control , Connectivity with SQL server , Operations of database through coding , ADO Data Control , Advantages of ADODC over DC , Studying the properties and Methods of ADODC , Connectivity with SQL server ,Report Generation , Developing ADO application through ADODC and coding , Report Generation	<b>12</b>
	<b>Sessional Works : 20 Marks</b> • College can take decision accordingly as per their convenience.	
	<b>Reference Books:</b> 1. Mastering Visual Basic 2. Visual Basic Black Book	

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**B.C.A. V<sup>th</sup> Semester Syllabus (CBCS)**  
**Paper No. XXVIII – Organizational Behavior**

*Total - 100 marks*

Theory – 80 Marks  
 Sessional – 20 Marks

		<b>No. of Lectures</b>
<b>Unit I</b>	<b>Evolution of Management thought:</b> Classical School to Contingency School. Contribution of Management thinkers and proponents: Fredrick Taylor, Max Weber, Henri Fayol, Frank and Lillian Gilbreth, Henry Gantt, Elton Mayo and others. OB Studies and Experiments: Classical Conditioning Theory, Hawthorne Studies and others.	<b>12</b>
<b>Unit II</b>	<b>Individual Dynamics – I</b> Personality: Conceptualization, Discussions on Type vs. Trait Theory and Nature vs. Nurture Type Theory: Freud’s Theory of Psychosocial Stages, Carl Jung’s Theory of Personality , Theory X vs. Theory Y and others. Trait Theory: Myer-Brigg’s Trait Indicator, Big-Five Personality Traits and others.	<b>12</b>
<b>Unit III</b>	<b>Individual Dynamics - II</b> Theories of Motivation: Maslow’s Hierarchy of Needs Theory, Herzberg’s Two-Factor Theory, McClelland Human Motivation Theory, Alderfer’s ERG Theory, Vroom’s Expectancy Theory, Adam’s Equity Theory, Skinner’s Reinforcement Theory, Locke’s Goal Setting Theory, Deci and Ryan’s Cognitive Evaluation Theory	<b>12</b>
<b>Unit IV</b>	<b>Group Dynamics</b> Communication: Concept, Process, Communication channels, Barriers and Implications for Managers, Group Development: Definition, Foundations of Group Behavior, Bruce Tuckman’s Stages of Development, Group Properties (roles, norms, status, size and cohesiveness) Decision Making: Group vs. Individual Decision Making, Group decision making techniques, Stages and Process of Decision Making	<b>14</b>
<b>Unit V</b>	<b>Organizational System</b> Organizational Structures: Concept, Design Types, Chain of Command, Span of Control, Centralization vs. Decentralization. Stress Management: Concept of Work Stress, Emotional Intelligence, and Measures for managing stress. Managing Stress related to Business & Employment in Post COVID-19 Era.	<b>10</b>
	<b>Sessional Works : 20 Marks</b> 1. Group Discussion : 10 Marks 2. Test / Tutorial : 10 Marks	
	<b>Reference Books:</b> 1. Robbins, S., Judge, T., & Vohra, N. (2016). Organizational Behavior. (16e, Ed.) Mullins, L. J. (2010). Management and Organizational Behaviour. (9th, Ed.) 2. Bratton, J. (2016). Introduction to Work and Organizational Behaviour. (3rd, Ed.) 3. Butler, M., & Rose, E. (Eds.). (n.d.). Introduction to Organisational Behaviour. 4. Aswathappa, K. (2017). Organisational Behaviour. (12th, Ed.) 5. Rollinson, D. (2008). Organisational Behaviour and Analysis: An Integrated Approach. (4th, Ed.)	

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B.C.A. V<sup>th</sup> Semester Syllabus (CBCS)  
Paper No. XXIX – Software Engineering

Total - 100 marks  
Theory – 80 Marks  
Sessional – 20 Marks

		No. of Lectures
Unit 1	<b>Overview of systems Analysis and design System concepts :</b> Types of systems: Information System, System Development Life cycle, Role & Skills of system Analyst, Models: 1) Waterfall 2) Prototyping 3) Spiral ( including WIN-WIN Spiral) 4) RAD 5) Group Based Approach: JAD 6) Object Oriented methodology	12
Unit II	<b>A) Current trends in Software Engineering :</b> 1 Software Engineering for projects & products. 2 Introduction to Web Engineering and Agile process <b>B) Information requirement Analysis:</b> 1) Decision Analysis Tools: Decision Tree, Decision Table, Structured English 2) Functional Decomposition Diagram 3) Process modeling with physical and logical Data Flow Diagrams 4) Data Dictionary Case Studies on Decision analysis tools , FDDs, DFDs should be covered	14
Unit III	<b>Software Analysis :</b> Requirements Engineering; Feasibility Study : economical, operational, social, technical; Requirements Elicitation; Requirements Analysis; Requirements Validation and Management. Size Estimation; Cost Estimation Models; COCOMO, COCOMO II; Software Risk Management. <b>Activities in Requirements Determination :</b> a) Requirements Anticipation b) Requirements Investigation c) Requirements Specifications	14
Unit IV	<b>Software requirement Specification (SRS) :</b> 1] Structure and contents of the requirements specification analysis modeling, types of requirements - functional and non-functional , Quality criteria, requirements definition ,SRS format, Fundamental problems in defining requirements. 2] Structure and standards followed for SRS. 3] characteristics of good SRS – Unambiguous, complete, verifiable, consistent, modifiable, traceable, usable during maintenance	12
Unit V	<b>Maintenance :</b> Types of Maintenance, Maintenance Cost, Reverse Engineering, Introduction to legacy systems, <b>Documentation :</b> Types, Role of documentation maintenance	10
	<b>SESSIONAL WORK: 20 Marks</b> College can take decision as per their convenience.	
	<b>Reference Books :</b> 1. System Analysis and Design by Jalote 2. Software Engineering by Sommerville 3. Software Engineering - W S Jawadekar 4. System Analysis & Design methods – Whiten, Bentley 5. System Analysis & Design – Elias Awad 6. Object Oriented Modelling& Design – James Rumbaugh 7. Analysis & Design of Information System – James Senn 8. Analysis & Design of Information System – V. Rajaraman 9. Software Engineering Concepts-Richard Fairley	

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**B.C.A. V<sup>th</sup> Semester Syllabus (CBCS)**  
**Paper No. XXX – Banking & Insurance (Elective)**

*Total - 100 marks*

**Theory – 80 Marks**

**Sessional – 20 Marks**

**No. of Lectures**

<b>Unit I</b>	<b>Banking in India :</b> Meaning and definition of Bank, Banking and Banking Company. Commercial Banks: Introduction, Structure of Commercial Banks in India, functions, credit creation by commercial Banks, Principle of liquidity and profitability. <b>Co-operative Banks:</b> Introduction, Structure, organization and management, progress and problems. <b>Regional Rural Banks:</b> Introduction, objectives, organization and management, progress and problems.	<b>10</b>
<b>Unit II</b>	<b>Reserve Bank of India</b> The Reserve Bank of India: Introduction, organization and management General functions, regulation of money and credit supply, credit control measures	<b>08</b>
<b>Unit III</b>	<b>Banker and Customer</b> The relationship between Banker and Customer, general relationship — special relationship, statutory obligation to honor Cheque - Bankers lien. Duty to maintain secrecy of customers' account, right to claim incidental charges, right to charge compound interest, Banking Ombudsman.	<b>10</b>
<b>Unit IV</b>	<b>Account of Customers:</b> i) General precautions for opening accounts, KYC (Know Your Customer), Types of deposit accounts, fixed deposit receipt, nomination, TDS. . ii) Special types of customers, minor, married women, Lunatic; Partnership, Joint stock companies unincorporated bodies. Executor and Administrators. Trusts Accounts, Joint Accounts. iii) Principles of sound lending, secured and unsecured advances, Forms of advances, iv) Modes of charging security: Lien, Pledge, Mortgage, Assignment, Hypothecation,	<b>10</b>
<b>Unit V</b>	<b>Electronic Banking (E-Banking):</b> Introduction, Traditional banking v/s E-Banking, electronic delivery channels (ATMs, Smart cards, mobile banking, internet banking,) t-banking transaction, Truncated cheques and electronic cheques, MCgh product, Advantages of Banking, constraints in E-Banking, security measures, RTGS & NEFT. E-Banking During & Post COVID-19 Pandemic.	<b>10</b>
<b>Unit VI</b>	<b>Insurance :</b> Concept and importance of Insurance, Principles of Insurance, Growth & Development of Indian Insurance Industry – Regulations of Insurance Business and The Emerging Scenario – Introduction to Life & General Insurance – Life Insurance: Features of Life Insurance – Essentials of Life Insurance Contract – Kinds of Insurance Policies - Premium determination – Life Policy Conditions, Risk and Insurance.	<b>12</b>
	<b>Sessional Marks : 20 Marks</b> 1. Test / Tutorial : 10 Marks 2. Preparing Instruments of Bank/ Insurance as per convenience. : 10 Marks	
	<b>References Books :</b> 1 Cordon & Natarajan, Banking Law and Practice 2008, Himalaya Publishing Mumbai. 2 Insurance Laws and Practices. Excel Books Private Limited, A-45, New Delhi. 3 KC. Shekher: Banking Theory & practice, Vahi Educational Books, Sahibabad (U.P). 4 Read, E.W., Commercial Bank Management, Harper and Row Publisher New York.	

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B.C.A. V<sup>th</sup> Semester Syllabus (CBCS)  
Paper No. XXX – Retail Management (Elective)

Total - 100 marks

Theory – 80 Marks  
Sessional – 20 Marks

		No. of Lectures
Unit V	<b>Introduction to Retailing:</b> Meaning, Definition, Scope of Retailing, Role and Functions of retailers, Advantages of Retailing, Organized and Unorganized Retailing, Indian Retail Scenario Vs. Global Retail Scenario, Role of Retail in Nation's Economy	12
Unit V	<b>Theories and Formats of Retailing:</b> 1. Environmental Theory 2. Cyclical Theory 3. Conflictual Theory. Formats of Retailing Store based, Non store and Service retailing	12
Unit V	<b>Retailing Planning and Development:</b> Understanding the Retail Customer Marketing Research for Retailing, Strategic Retail Planning Process, - Retail Strategies: Growth Strategies Positioning a retail outlet; developing a retail brand strategy, expansion strategy, pricing strategy, Retail Location and Site Selection.	12
Unit V	<b>Merchandise Management:</b> Meaning of Merchandising, Factors influencing Merchandising, Basics & Types of Retail Merchandising, Concept & Process of merchandise Planning, Methods of Merchandise Procurement, Retail Pricing and Evaluating.	12
Unit V	<b>Retail HRM &amp; New Trends in Retailing:</b> Identifying Manpower requirements, Recruitment, Selection & Training, Emerging Trends in Retailing in India, Technology in Retailing, Non store retailing (e-retailing) - The Impact of Information Technology in retailing. Legal aspects in retailing, Social issues in retailing, Ethical issues in retailing. Innovative Retail During & Post COVID-19 Pandemic.	12
	<b>Sessional : 20 Marks</b> 1. Test / Tutorial : 10 Marks 2. Preparing Market Research Plan of Product : 10 Marks	
	<b>Reference Books :</b> 1. Retailing Management : Michael Levy and Barton Weitz, TMGH, 5th Edition 2. Retail Management: Swapna Pradhan, TTMGH 3. Retail Management – Chetan Bajaj; Rajnish Tuli; Nidhi Varma - Oxford ks 4. Fundamentals of Retailing: K V S Madaan, McGraw Hill 5. Retail Marketing Management: David Gilbert, Pearson Publication 6. Retail Management : Arif Sheikh, Himalaya Publishing	

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**DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY****CIRCULAR NO.SU/ COM.&MGT./C.B.C.& G.S./28/2021**

It is hereby informed to all concerned that, the syllabi of following courses prepared by the Board of Studies & recommended by the Dean, Faculty of Commerce & Management the **Academic Council at its meeting held on 15 February 2021 has decided that to adopt the Choice Based Credit and Grading System from the academic Year 2020-2021 Under the Faculty of Commerce & Management.**

Sr. No.	Name of the Course	Semester
1]	B.Com.	VI
2]	BBA	VI
3]	BCA	VI
4]	B.Com. E-Commerce	IV
5]	MPM	IInd

This is effective from the Academic Year 2020-2021 & onwards as appended herewith.

All concerned are requested to note the contents of this circular and bring the notice to the students, teachers and staff for their information and necessary action.

University Campus,  
Aurangabad-431 004.  
REF.NO. SU/ COM.MGT/2020-21  
29439 - 29789  
Date:- 17-03-2021.

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*Deputy Registrar,  
Academic Section  
Syllabus unit.*

**Copy forwarded with compliments to :-**

- 1] **The Principals, affiliated concerned Colleges, Dr. Babasaheb Ambedkar Marathwada University.**
- 2] **The Director, University Network & Information Centre, UNIC, with a request to upload this Circular on University Website.**

**Copy to :-**

- 1] The Director, Board of Examination & Evaluation,
- 2] **The Section Officer, [ Commerce Unit ] Examination Branch,**
- 3] The Section officer, [Eligibility Unit],
- 4] **The Programmer [Computer Unit-1] Examinations,**
- 5] **The Programmer [Computer Unit-2] Examinations,**
- 6] The In-charge, [E-Suvidha Kendra], Rajarshi Shahu Maharaj Pariksha Bhavan, Dr. Babasaheb Ambekar Marathwada University.
- 7] The Public Relation Officer,
- 8] The Record Keeper.

**DR. BABASAHEB AMBEDKAR  
MARATHWADA UNIVERSITY,  
AURANGABAD.**



Curriculum of

BACHELOR OF COMPUTER APPLICATION

(BCA)

IIIIRD YEAR

SIX SEMESTER

under Choice Based Credit & Grading System

*[ Effective from the Academic Year 2020-21 & onwards ]*

*[ Signatures ]*


**DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY, AURANGABAD.**

**FACULTY OF COMMERCE & MANAGEMENT.**

Syllabus - Bachelor of Computer Application (BCA)

Choice Based Credit System (CBCS)

<b>Semester &amp; Credits</b>	<b>Core Course [04]</b>	<b>Ability Enhancement Compulsory Courses [AEC] [01]</b>	<b>Discipline Specific Elective [DSE] [01]</b>
VI Credit 24	1. Element of Commercial Portal (HTML 5) 2. Android 9 3. Business Law - III 4. Project	1. Software Testing	Elective Paper [Any One] 1. Services Marketing <b>OR</b> 2. Export Management
<b>Total Credits 24</b>	<b>No. of Credits : 16</b>	<b>No. of Credits : 04</b>	<b>No. of Credits : 04</b>



**Structure of B. C. A. Sixth Semester**  
**Choice Based Credit Grading System ( CBCS ) 2019 - 2020**

Paper Number	Subject/ Title of the Paper	Course	Weekly		Credits		IA	UA	Total Marks	Duration of Theory Exam
			Th	Pr	Th	Pr				
XXXI	Elements of Commercial Portals (HTML 5)	Core Course	4	-	4	-	20	80	100	3 Hrs
XXXII	Android 9	Core Course	4	-	4	-	20	80	100	3 Hrs
XXXIII	.Business Law III	Core Course	4	-	4	-	20	80	100	3 Hrs
XXXIV	Project	Core Course	4	-	4	-	20	80	100	3 Hrs
XXXV	Software Testing	Ability Enhancement Compulsory	4	-	4	-	20	80	100	3 Hrs
XXXVI	1.Services Marketing <b>OR</b> 2.Export Management	Discipline Specific Elective [Any One]	4	-	4	-	20	80	100	3 Hrs
	<b>Total</b>		<b>24</b>	<b>-</b>	<b>24</b>	<b>-</b>	<b>120</b>	<b>480</b>	<b>600</b>	<b>--</b>

**B.C.A. VI<sup>th</sup> Semester Syllabus (CBCS)**  
**Paper No. XXXI – Elements of Commercial Portals (HTML 5)**



S-01 &amp; 02 June, 2016 AC after Circulars from Circular No.100 &amp; onwards

- 1 -

**DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY****CIRCULAR NO. SU/Sci./B.Sc. Syllabi/100/2016**

It is hereby notified for information to all concerned that, on the recommendation of the Ad-hoc Board in Computer Science and I.T. the **Academic Council at its meeting held on 01 & 02 June, 2016** has accepted the following revised syllabi as mentioned against their names under the Faculty of Science :-

Sr. No.	B.Sc. III Year Revised Syllabus	Semester
[1]	<b>B.Sc. Computer Science</b> Degree Course	V & VI
[2]	<b>B.Sc. Information Technology</b> Degree Course	V & VI
[3]	<b>B.C.A. Science</b> Degree Course	V & VI
[4]	<b>B.Sc. Animation</b> Degree Course	V & VI
[5]	<b>B.Sc. Computer Science</b> Optional	V & VI
[6]	<b>B.Sc. Information Technology</b> Optional	V & VI
[7]	<b>B.C.A. Science</b> Optional	V & VI
[8]	<b>B.Sc. Computer Maintenance</b> Optional	V & VI

This is effective from the **Academic Year 2016-2017** and onwards.

These syllabi are also available on the **University Website** [www.bamu.ac.in](http://www.bamu.ac.in)

All concerned are requested to note the contents of this circular and bring the notice to the students, teachers and staff for their information and necessary action.

University Campus,  
Aurangabad-431 004.  
REF.No.SU/B.Sc./2016/2389-639  
**A.C.M.A.I.No.10**

Date:- 07-06-2016.

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**Director,**  
**Board of College and**  
**University Development.**

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S-01 & 02 June, 2016 AC after Circulars from Circular No.100 & onwards

- 2 -

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**Copy forwarded with compliments to :-**

- 1] **The Principals, affiliated concerned Colleges,  
Dr. Babasaheb Ambedkar Marathwada University.**

**Copy to :-**

- 1] The Controller of Examinations,
- 2] The Section Officer, [B.Sc. Unit],
- 3] The Section Officer, [B.C.S. Unit],
- 4] The Programmer [Computer Unit-1] Examinations,
- 5] The Programmer [Computer Unit-2] Examinations,
- 6] The In-Charge, E-Suvidha Kendra, [Professional Unit], Rajarshi  
Shahu Maharaj Pariksha Bhavan, Dr. Babasaheb Ambedkar  
Marathwada University,
- 7] The Record Keeper,  
Dr. Babasaheb Ambedkar Marathwada University.

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**S\*/-0070616/-**

**NAAC Re-accredited with Grade 'A'**

**Dr. Babasaheb Ambedkar Marathwada University**

Aurangabad-431004



**REVISED SYLLABUS OF  
B.Sc. (Computer Science)  
Three Year Course  
(With Effective From: 2014-15)**



**हे ज्ञानिची पवित्रता | ज्ञानीचि आथि ||**

**Dr. Babasaheb Ambedkar Marathwada University**

Aurangabad-431004.

Tel.No. : 0240-2403400/431, Fax:0240-2403113

Website : [www.bamu.ac.in](http://www.bamu.ac.in), <http://bamua.digitaluniversity.ac.in>

**Dr. Babasaheb Ambedkar Marathwada University.**

**Appendix 'A'**

A Candidate shall be admitted to the I year of the B.Sc. (Computer Science) degree course only if he/she satisfies the following condition:

1. He/ She must have passed the higher secondary (multipurpose) examination conducted by H.S.C. board Government of Maharashtra with science / technical subjects Or an Examination of any statutory University and Board recognized as equivalent thereto.

OR

He/She must have passed examination prescribed at the end of second year of the junior college conducted by the H.S.C. board, Government of Maharashtra with English, Second language, Physics, Chemistry, Mathematics and or Biology or one of the technical subjects prescribed at the said examination as the optional or elective subjects or an examination recognized as equivalent thereto.

OR

Candidate having offered prescribed vocational course (MCVC) with Computer techniques/I.T./Electronics.

OR

Three years Diploma Course in engineering conducted by the board of technical Education, Maharashtra State.

2. He/ She must have passed at qualifying examination.

A candidate who has passed the B.Sc.(Computer Science) examination of this university may be allowed to present himself subsequently at the degree examination in a subject or subjects other than those he has taken earlier provided that he puts in three years of attendance as a regular candidate for First, Second and Third year in the subject or subjects concerned excluding compulsory English, Second Language and remaining optional subject(s).

A candidate shall not be allowed to appear for such examination if he has passed the higher examination.

The Degree of Bachelor of Science (Computer Science) shall be conferred on candidate who has pursued a regular course of study consisting of six semesters in the relevant subject as prescribed and has appeared at the end examination and passed under the credit based system in all the examination prescribed for the Degree course in the faculty.

The pattern of the examination and the scope is indicated in the syllabus.[Annexure B]

- The Number of students in a theory class shall not exceed 60.
- Maximum number of students in a batch for practicals in first four semesters shall consist of 20 students and for fifth & sixth semester the batch shall consist of 15 students.
- The rules for admission to the subsequent (next) semesters will be the same as per the University guidelines.
- For Each course the concerned teacher will have to conduct Class tests after completion of 15 and 20 lectures. The mark list of the same is to be submitted to the university authority within 7 working days after the completion of class tests.
- Final Examination will be conducted by the University based on the complete syllabus.
- Final Practical Examination will be conducted by the university and examiners will submit the marks in the prescribed format of students for practical examination to the university.

**The Number of Teaching Staff & infra-structure required to run the course will be as follow:-**

The graduation is very important phase in the life of our young students. The college responsibly is not only to deliver a quality syllabus based education, but also to motivate them to be a good healthy citizen. In this direction, the college must have sufficient facilities to run the course. A guideline is listed below. The College must have following minimum facilities:

**Infrastructure:**

1. One Class room to accommodate 60 students. (approximately 250 sq.ft.)
2. A well equipped software Laboratory having a LAN system of 30 nodes and having internet connectivity with broad band. All legal software, antivirus software, firewall be available for smooth functioning of the laboratory.
3. A hardware laboratory having twenty microprocessor kits with add on cards as per their syllabus. Staff room of 100 sq.ft. with one table and one Almeria for each faculty member.
4. One office space of 100 sq.ft. with appropriate furniture.
5. One lady room of 100 sq.ft. with attached toilet.
6. One reading room of 200 sq.ft. with seating arrangements for at least 30 people. The library may be accommodated in the library.
7. One copy of every text book among five students for each subject be available along with one copy of reference book as per the syllabus.
8. Library must subscribe for computer and scientific magazines. Appropriate general reading materials must be available for overall development of students.
9. An open space for sports activities. The college must be encouraged to have sport equipments.

**Staff:**

1. The head of the department in the scale of reader/Professor.
2. The minimum number of teachers must be appointed as per the work load. Per semester, the work load may be computed on the basis of theory classes, tutorials and practical class per batch. Minimum number of teachers to run the course must be five excluding the head. Teachers must be appointed by the university/UGC norms. The quality of the course is directly related to quality of teachers for the course.
3. There must be one clerk in the office to look after administrative work. The placement of all staffs must be maintained properly.
4. One qualified librarian
- An appropriate number of class IV employees.

**Curriculum Structure and Scheme of Evaluation: B.Sc.(C.S.)**

Sr. No.	Paper Number	Name of the Paper Titles	Scheme of Teaching	Scheme of Evaluation(Marks)		
			Theory / Practical (Lect. /week)	Theory / Practical ( Marks )	Exam Duration ( in hrs.)	Total Mark
<b>I Semester</b>						
1	CS101-T	Computer Fundamentals	3	50	2	50
2	CS102-T	Digital Electronics	3	50	2	50
3	CS103-T	Microprocessor - I	3	50	2	50
4	CS104-T	C Programming – I	3	50	2	50
5	CS105-T	Communication Skill – I	3	50	2	50
6	CS106-T	Mathematical Foundation	3	50	2	50
7	CS107-P	Office Suite	4	50	2	50
8		C Programming – I	4	50	2	50
9	CS108-P	Microprocessor – I	4	50	2	50
10		Digital Electronics	4	50	2	50
<b>II Semester</b>						
1	CS201-T	Data Structure	3	50	2	50
2	CS202-T	Operating System	3	50	2	50
3	CS203-T	Microprocessor – II	3	50	2	50
4	CS204-T	C Programming – II	3	50	2	50
5	CS205-T	Communication Skill – II	3	50	2	50
6	CS206-T	Numerical Computation Methods	3	50	2	50
7	CS207-P	Data Structure	4	50	2	50
8		Microprocessor – II	4	50	2	50
9	CS208-P	C Programming – II	4	50	2	50
10		Numerical Comp. Methods	4	50	2	50

S-01 &amp; 02 June, 2016 AC after Circulars from Circular No.100 &amp; onwards

- 1 -

**DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY****CIRCULAR NO. SU/Sci./B.Sc. Syllabi/100/2016**

It is hereby notified for information to all concerned that, on the recommendation of the Ad-hoc Board in Computer Science and I.T. the Academic Council at its meeting held on 01 & 02 June, 2016 has accepted the following revised syllabi as mentioned against their names under the Faculty of Science :-

Sr. No.	B.Sc. III Year Revised Syllabus	Semester
[1]	B.Sc. Computer Science Degree Course	V & VI
[2]	B.Sc. Information Technology Degree Course	V & VI
[3]	B.C.A. Science Degree Course	V & VI
[4]	B.Sc. Animation Degree Course	V & VI
[5]	B.Sc. Computer Science Optional	V & VI
[6]	B.Sc. Information Technology Optional	V & VI
[7]	B.C.A. Science Optional	V & VI
[8]	B.Sc. Computer Maintenance Optional	V & VI

This is effective from the Academic Year 2016-2017 and onwards.

These syllabi are also available on the University Website [www.bamu.ac.in](http://www.bamu.ac.in)

All concerned are requested to note the contents of this circular and bring the notice to the students, teachers and staff for their information and necessary action.

University Campus,  
Aurangabad-431 004.  
REF.NO.SU/B.Sc./2016/2389-639  
**A.C.M.A.I.No.10**

Date:- 07-06-2016.

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**Director,**  
*Board of College and  
University Development.*

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S-01 & 02 June, 2016 AC after Circulars from Circular No.100 & onwards

- 2 -

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**Copy forwarded with compliments to :-**

- 1] **The Principals, affiliated concerned Colleges,  
Dr. Babasaheb Ambedkar Marathwada University.**

**Copy to :-**

- 1] The Controller of Examinations,
- 2] The Section Officer, [B.Sc. Unit],
- 3] The Section Officer, [B.C.S. Unit],
- 4] The Programmer [Computer Unit-1] Examinations,
- 5] The Programmer [Computer Unit-2] Examinations,
- 6] The In-Charge, E-Suvidha Kendra, [Professional Unit], Rajarshi Shahu Maharaj Pariksha Bhavan, Dr. Babasaheb Ambedkar Marathwada University,
- 7] The Record Keeper,  
Dr. Babasaheb Ambedkar Marathwada University.

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**S\*/-0070616/-**

**NAAC Re-accredited with Grade 'A'**

**Dr. Babasaheb Ambedkar Marathwada University**

Aurangabad-431004



**REVISED SYLLABUS OF**

**B. Sc. (Information Technology)**

**Three Year Degree Course**

**Semester – V and VI**

**(With Effective From: 2016-17)**



**हे ज्ञानिची पवित्रता | ज्ञानीचि आशि ||**

**Dr. Babasaheb Ambedkar Marathwada University**

Aurangabad-431004.

Tel.No. : 0240-2403400/431, Fax:0240-2403113

Website : [www.bamu.ac.in](http://www.bamu.ac.in), <http://bamua.digitaluniversity.ac.in>

**Curriculum Structure and Scheme of Evaluation: B.Sc.(I.T.)**

Sr. No.	Paper Number	Name of the Paper Titles	Scheme of Teaching	Scheme of Evaluation(Marks)		
			Theory / Practical (Lect./week)	Theory / Practical ( Marks )	Exam Duration ( in hrs.)	Total Mark
<b>V Semester</b>						
1	IT501-T	Software Project Management II	3	50	2	50
2	IT502-T	Data Communication & Networks	3	50	2	50
3	IT503-T	Beginners Programming with PHP	3	50	2	50
4	IT504-T	Ethical Hacking	3	50	2	50
5*	IT505-T	Data Warehousing	3	50	2	50
6*	IT506-T	Computer Graphics	3	50	2	50
7 <sup>#</sup>	IT507-T	Core Java-II	3	50	2	50
8 <sup>#</sup>	IT508-T	eXtended Markup Language (XML)	3	50	2	50
9	IT509-P	Pr. Based on DCN	4	100	2	100
10		Pr. Based on PHP	4		2	
11	IT510-P	Pr. Based on DW/ CG	4	100	2	100
12		Pr. Based on Core Java-II / XML	4		2	
<b>VI Semester</b>						
1	IT601-T	Software Testing & Quality Assurance	3	50	2	50
2	IT602-T	Wireless Networking	3	50	2	50
3	IT603-T	Advanced Programming with PHP	3	50	2	50
4	IT604-T	Cyber Law and Security	3	50	2	50
5*	IT605-T	Data Mining	3	50	2	50
6*	IT606-T	Cloud Computing	3	50	2	50
7 <sup>#</sup>	IT607-T	C# Programming	3	50	2	50
8 <sup>#</sup>	IT608-T	AJAX	3	50	2	50
9	IT609-P	Pr. Based on PHP	4	100	2	100
10		Pr. Based on C# / AJAX	4		2	
11	IT610-P	Major Project	8	100	3	100
12						

**\* and #: Any one paper is to be opted from the group**

**D R. BABASAHEB AMBEDKAR  
MARATHWADA UNIVERSITY,  
AURANGABAD.**



**Curriculum under Choice Based Credit &  
Grading System  
M.Sc. I & II Year  
Computer Science & I.T.  
Semester-I to IV**

**run at college level from the  
Academic Year 2015-16 & onwards**

**DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY, AURANGABAD  
DEPARTMENT OF COMPUTER SCIENCE AND  
INFORMATION TECHNOLOGY**



**SCHEME FOR CHOICE BASED CREDIT SYSTEM (CBCS)**

**W.E.F. JUNE, 2011 (ACADEMIC YEAR, 2011 to 2012 Onwards)**

**M. Sc. Computer Science Course Structure:**

Sem-I	Sem-II	Sem-III	Sem-IV
Advanced Java	Data Structure and Analysis of Algorithm	Java Network Programming	Pattern Recognition
Neural Network	Advanced Neural Network and Fuzzy System	Advanced Software Engineering and Technology	Major Project
Digital Signal Processing	Image Processing	Computer Vision	Seminar
Advanced Operating System	Parallel Computing	Elective - I: (Select any one from list of elective I) 1. Advanced Embedded System 2. Data Ware Housing 3. GIT 4. Biometric Techniques 5. Mobile Computing	Elective -II: (Select any one from list of elective II) 1. Theoretical Computer Science 2. Decision Support System & intelligent System 3. Data Mining 4. Cryptography and Network Security 5. Introduction to MEMS Pro+

**Semester-I**

Course Code	Course Title	No. of Credits	No. of Hours / Week	Total Marks:100	
				External	Internal
CSC401	Advanced Java	4	4	80	20
CSC402	Neural Network	4	4	80	20
CSC403	Digital Signal Processing	4	4	80	20
CSC404	Advanced Operating System	4	4	80	20
CSC451	Practical Based on CSC401	2	4 (Per Batch)	50	-
CSC452	Practical Based on CSC402	2	4 (Per Batch)	50	-
CSC453	Practical Based on CSC403	2	4 (Per Batch)	50	-
CSC454	Practical Based on CSC404	2	4 (Per Batch)	50	-
<b>Total No of Credits in Sem-I</b>		24	--	--	--

**Semester-II**

Course Code	Course Title	No. of Credits	No. of Hours / Week	Total Marks:100	
				External	Internal
CSC405	Data Structure and Analysis of Algorithm	4	4	80	20
CSC406	Advanced Neural Network and Fuzzy System	4	4	80	20
CSC407	Image Processing	4	4	80	20
CSC408	Parallel Computing	4	4	80	20
CSC455	Practical Based on CSC405	2	4 (Per Batch)	50	-
CSC456	Practical Based on CSC406	2	4 (Per Batch)	50	-
CSC457	Practical Based on CSC407	2	4 (Per Batch)	50	-
CSC458	Practical Based on CSC408	2	4 (Per Batch)	50	-
<b>Total No of Credits in Sem-II</b>		24	--	--	--

## Semester-III

Course Code	Course Title	No. of Credits	No. of Hours / Week	Total Marks:100	
				External	Internal
CSC501	Java Network Programming	4	4	80	20
CSC502	Advanced Software Engineering and Technology	4	4	80	20
CSC503	Computer Vision	4	4	80	20
CSC504	Elective - I: (Select any one from list of elective I)	4	4	80	20
CSC551	Practical Based on CSC501	2	4 (Per Batch)	50	-
CSC552	Practical Based on CSC502	2	4 (Per Batch)	50	-
CSC553	Practical Based on CSC503	2	4 (Per Batch)	50	-
CSC554	Practical Based on CSC504	2	4 (Per Batch)	50	-
<b>Total No of Credits in Sem-III</b>		24	--	--	--

## Semester-IV

Course Code	Course Title	No. of Credits	No. of Hours / Week	Total Marks:100	
				External	Internal
CSC505	Pattern Recognition	4	4	80	20
CSC506	Elective -II: (Select any one from list of elective II)	4	4	80	20
CSC555	Practical Based on CSC505	2	4 (Per Batch)	50	-
CSC556	Practical Based on CSC506	2	4 (Per Batch)	50	-
CSC557	Major Project	8	16 (Per Batch)	50	-
CSC558	Seminar	4	8 (Per Batch)	50	-
<b>Total No of Credits in Sem-IV</b>		24	--	--	--

Total credits of the course =104 (24+24+24+24+8)

Elective I					
Course Code	Course Title	No. of Credits	No. of Hours / Week	Total Marks:100	
				External	Internal
CSC421	Advanced Embedded System	4	4	80	20
CSC422	Practical Based on CSC421	2	4 (Per Batch)	50	-
CSC423	Data Ware Housing	4	4	80	20
CSC424	Practical Based on CSC423	2	4 (Per Batch)	50	-
CSC425	GIT	4	4	80	20
CSC426	Practical Based on CSC425	2	4 (Per Batch)	50	-
CSC427	Biometric Techniques	4	4	80	20
CSC428	Practical Based on CSC427	2	4 (Per Batch)	50	-
CSC429	Mobile Computing	4	4	80	20
CSC430	Practical based on CSC429	2	4 (Per Batch)	50	-

<b>Elective II</b>					
<b>Course Code</b>	<b>Course Title</b>	<b>No. of Credits</b>	<b>No. of Hours / Week</b>	<b>Total Marks: 100</b>	
				<b>External</b>	<b>Internal</b>
CSC431	Theoretical Computer Science	4	4	80	20
CSC432	Practical based on CSC431	2	4 (Per Batch)	50	-
CSC433	Decision Support System & Intelligent System	4	4	80	20
CSC434	Practical based on CSC433	2	4 (Per Batch)	50	-
CSC435	Data Mining	4	4	80	20
CSC436	Practical based on CSC435	2	4 (Per Batch)	50	-
CSC437	Cryptography and Network Security	4	4	80	20
CSC438	Practical based on CSC437	2	4 (Per Batch)	50	-
CSC439	Introduction to MEMS Pro+	4	4	80	20
CSC440	Practical based on CSC439	2	4 (Per Batch)	50	-

**Service Courses:**

The student should opt service course of 8 credits either from parent department or from other department.

<b>Course Code</b>	<b>Course Title</b>	<b>No. of Credits</b>	<b>No. of Hours / Week</b>	<b>Total Marks:100</b>	
				<b>External</b>	<b>Internal</b>
CSC441	Introduction to MATLAB	2	2	80	20
CSC442	Practical Based on CSC441	2	4 (Per Batch)	50	-
CSC443	Aptitude	2	2	80	20
CSC444	Practical Based on CSC443	2	4 (Per Batch)	50	-
CSC445	Personality Development	2	2	80	20
CSC446	Practical Based on CSC445	2	4 (Per Batch)	50	-
CSC447	Communication Skill	2	2	80	20
CSC448	Practical Based on CSC447	2	4 (Per Batch)	50	-
CSC449	Programming in VB.NET	2	2	80	20
CSC450	Practical Based on CSC449	2	4 (Per Batch)	50	-