



MGSM's Arts, Science & Commerce College Chopda

**Curriculum Showing the Experimental
Learning Through Project Work/Field
Work/Internship
as Prescribed by Affiliating University**



**NORTH MAHARASHTRA UNIVERSITY,
JALGAON**



SYLLABUS

**Master of Science
in
Microbiology**

**Part-II
(Semester – III and IV)**

w. e. f. June 2013

NORTH MAHARASHTRA UNIVERSITY, JALGAON
MICROBIOLOGY

Syllabus for M.Sc. (Part- II) Microbiology

Effective from June 2013

Subject code	Title of the paper	Duration (Hrs./Wk)	Max. Marks	Exam. Time (Hrs.)
SEMESTER – III				
Theory courses				
MB-301	Applied and Environmental Microbiology	04	100	03
MB-302	Molecular Biology and Bioinformatics	04	100	03
MB-303	Pharmaceutical Microbiology	04	100	03
Laboratory courses				
MB-304	Methods in Biostatistics and Bioinformatics	04+04	100	06
MB-305	Methods in Applied Microbiology	04+04	100	06
SEMESTER – IV				
Theory courses				
MB-401	Fermentation Technology	04	100	03
MB-402	Applied Molecular Biology	04	100	03
MB-403	Agricultural Microbiology	04	100	03
Laboratory courses				
MB-404	Methods in Biotechnology	04+04	100	06
MB-405	Project Dissertation	04+04	100	06

Instructions:

1. Each theory course has to be completed in 50 lectures of 60 min duration each in one semester.
2. Semester II and IV will have **THREE** theory courses and **TWO** Practical courses
3. Practical examination of each laboratory course shall be conducted at the end of each respective semester.
4. Each course will be of 100 marks (20 marks internal assessment and 80 marks-external examination) under NMU affiliated colleges and Institutions.
5. Each course will be of 100 marks (25 marks internal assessment and 75 marks-external examinations) in the School of Life Sciences of NMU, Jalgaon.



The project allotted during the Forth semester and it is expected that the students will design experiments and collect experimental data to deduce conclusions. At the end, they will submit a detailed thesis for evaluation. The students should be introduced to research methodology in the beginning through few lectures.

The approach towards the execution of project should be as follows:

1. Selection of topic relevant to priority areas of biotechnology.
2. Collection of literature from libraries, internet, on-line journals, etc.
3. Planning of research experiments
4. Performing the experiments with scientific and statistical acceptability.
5. Presentation of observations and results.
6. Interpretation of results and drawing important conclusions.
7. Discussion of obtained results with respect to literature reports.
8. Preparation of report (thesis) containing introduction, materials and methods, results and discussion, conclusions, bibliography.
9. Presentation of research data in a bound form.



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PRINCIPAL
Arts, Science & Commerce, College
Chopda (Jalgaon)

2011

North Maharashtra University,
Jalgaon

BACHELOR OF COMMERCE & MANAGEMENT

Syllabus
of

Bachelor in Business Administration

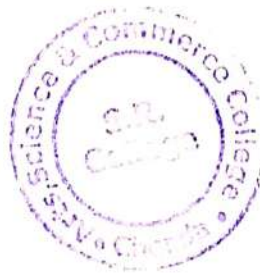
(BBA)

With Effect From June 2011



Principal
Arts, Science & Commerce College
Chopta (Jalgaon)

Third Year B.B.A. (New Structure W.E.F. June : 2011)			
SEMESTER V			
Sr.No.	Code	Subject Title	Marks
1	A5.1	Communication Skills & Auditing	100
2	A5.2	Corporate Laws & Income Tax Law	100
3	A5.3	Financial Management	100
4		Specialisation - Paper I (Any one)	100
	A5.4.1	Financial Management	
	A5.4.2	Marketing Management	
	A5.4.3	Human Resource Management	
	A5.4.4	Production & Materials Management	
	A5.4.5	Agro Business	
5	A5.5	Business Research Methods	100
6	A5.6	Corporate Governance	100
		Total Marks :-	600
SEMESTER VI			
Sr.No.	Code No.	Subject Title	Marks
1	A6.1	Auditing Practices	100
2	A6.2	Corporate Laws & Current Economic	100
3	A6.3	Income Tax Law	100
4		Specialisation - Paper II (As opted for at the Semester V)	100
	A6.4.1	Financial Management	
	A6.4.2	Marketing Management	
	A6.4.3	Human Resource Management	
	A6.4.4	Production & Materials Management	
	A6.4.5	Agro Business	
5	A6.5	Competitive Skills	100
6	A6.6	Project Report (Based on Specialisation)	100
		Total Marks :-	600



3A
PRINCIPAL
Arts, Science & Commerce, College
Chopda (Dahlgam)

North Maharashtra University, Jalgaon
Faculty of Commerce and Management

Syllabus for

T.Y.B.B.A. Semester – VI

Compulsory Paper: A 6.6: Project Report (Based On Specialization)

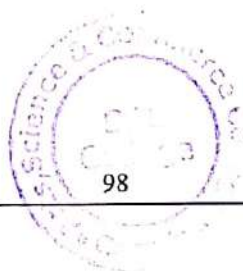
Total Lectures: 48

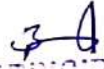
[The weightage for the paper 6.6 that is project should be 50:50 that is 50 for Internal and 50 for External, Maximum Total marks: 100]

PRACTICAL TRAINING AND INTERNSHIP PROJECT

- 1.1. Each student shall have to undergo a practical training for a period of not less than 3 weeks during vacation falling after the end of second year/during winter vacation of the year.
- 1.2. In the sixth semester examination student were to do "Project Work" individually on the basis of specialization. No group work is allowed in this. The topic should be decided with consultation and guidance of internal teacher of the Institute /college at the end of the second year, so that the student can take up the training during the vacations. The Project should be necessarily innovative and /or Problem solving. No teacher shall be entrusted with more than 15 students for guidance and supervision.
- 1.3. The departments / institute/ college shall submit the detailed list of candidate with Project Titles, name of the organization, internal guide & elective subject to the university on or before 31st July of the year.
- 1.4. The student has to write a report based on the actual training undergone during the vacations at the specific selected enterprise, get it certified by the concerned teacher that the Project report has been satisfactorily completed and submit TWO typed copies of the same to the Head / Director of the institute/principal of the college.
- 1.5. One copy of the report submitted by the student shall be forwarded to the University by the Institute before 31st January.
- 1.6. The project work will carry maximum 100 marks, of which internal teacher shall award marks out of maximum 50 marks on the basis of project work done by the student as a continuous assessment. Remaining marks shall be awarded out of maximum 50 marks by examining the student during Viva- voce, by the panel of the external examiners to be appointed by the University. Minimum 5 minutes project presentation is compulsory. Facility will be provided by the center.
- 1.7. No students will be permitted to appear for Viva-voce and Semester VI examinations, unless and until (s) he submits the project report before the stipulated time.

====Best of Luck====




PRINCIPAL
Arts, Science & Commerce, College
Chopda (Jalgaon)

NORTH MAHARASHTRA UNIVERSITY, JALGAON

*Faculty of Commerce
and Management*



Third Year Bachelor of Business

Administration

T.Y.B.B.A

Syllabi of Semester-VI

w.e.f.: June 2010

[2010*]

VDP



[Signature]
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Chopda (Jalgaon)



North Maharashtra University; Jalgaon

(NACC Accredited 'B' Grade University)


FACULTY OF COMMERCE & MANAGEMENT

BACHELOR OF BUSINESS ADMINISTRATION (B.B.A.)

EQUIVALENCES FOR T.Y.B.B.A. (W.E.F. JUNE -2010)

Bachelor In Business Administration: B.B.A.				
New Structure (With Effect From June-2010)			Old Structure (With Effect From July-2002)	
SEMESTER V- 100 marks			Annual - 100 marks	
Sr. No.	Code No.	Subject Title	Code No.	Subject Title
1	A5.1	Communication Skills & Auditing	3	Audit Income Tax
2	A5.2	Corporate Laws & Income Tax Law	5	Decision Support System(M.I.S.)
3	A5.3	Financial Management	2	Advanced Accountancy
<i>Specialisation paper- I any one)</i>				
4	A5.4.1	Financial Management		
	A5.4.2	Marketing Management		
	A5.4.3	Human Resource Management	6	Business Administration-II
	A5.4.4	Production & Materials Management		
	A5.4.5	Agro Business		
5	A5.5	Business Research Methods	1	Indian Economic Environment
6	A5.6	Corporate Governance	8	Project Report (Based On Specialisation)
SEMESTER VI				
	Code No.	Subject Title	Code No.	Subject Title
1	A6.1	Auditing Practices	3	Audit Income Tax
2	A6.2	Corporate Laws & Current Economic Scenario	5	Decision Support System(M.I.S.)
3	A6.3	Income Tax Law	2	Advanced Accountancy
<i>Specialisation - Paper II (As opted for at the Semester V)</i>				
4	A6.4.1	Financial Management		
	A6.4.2	Marketing Management /		
	A6.4.3	Human Resource Management	6	Business Administration-II
	A6.4.5	Production & Materials Management/		
	A6.4.6	Agro Business		
5	A6.5	Competitive Skills	1	Indian Economic Environment
6	A6.6	Project Report (Based on Specialisation)	8	Project Report (Based On Specialisation)




PRINCIPAL
 Arts, Science & Commerce College
 Jalgaon (M.S.)



North Maharashtra University, Jalgaon

(NAAC Accredited 'B' Grade University)

FACULTY OF COMMERCE & MANAGEMENT

New Syllabus: T.Y.B.B.A. (W.E.F. June -2010)

Compulsory Paper: A 6.6: Project Report (Based On Specialization)

SEMESTER - VI

80+20 Pattern: External Marks 80 +Internal Marks 20 = Maximum Total marks: 100

Semester - VI

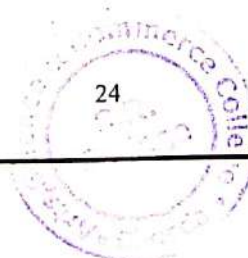
A 6.6: Project Report

[100 marks]

PRACTICAL TRAINING AND INTERNSHIP PROJECT

- 1.1. Each student shall have to undergo a practical training for a period of not less than 3 weeks during vacation falling after the end of second year/during winter vacation of the year.
- 1.2. In the sixth semester examination student were to do "Project Work" individually on the basis of specialization. No group work is allowed in this. The topic should be decided with consultation and guidance of internal teacher of the Institute /college at the end of the second year, so that the student can take up the training during the vacations. The Project should be necessarily innovative and /or Problem solving. No teacher shall be entrusted with more than 15 students for guidance and supervision.
- 1.3. The departments / institute/ college shall submit the detailed list of candidate with Project Titles, name of the organization, internal guide & elective subject to the university on or before 31st July of the year.
- 1.4. The student has to write a report based on the actual training undergone during the vacations at the specific selected enterprise, get it certified by the concerned teacher that the Project report has been satisfactorily completed and submit TWO typed copies of the same to the Head / Director of the institute/principal of the college.
- 1.5. One copy of the report submitted by the student shall be forwarded to the University by the Institute before 31st January.
- 1.6. The project work will carry maximum 100 marks, of which internal teacher shall award marks out of maximum 40 marks on the basis of project work done by the student as a continuous assessment. Remaining marks shall be awarded out of maximum 60 marks by examining the student during Viva-voce, by the panel of the external examiners to be appointed by the University.
- 1.7. No students will be permitted to appear for Viva-voce and Semester VI examinations, unless and until (s) he submits the project report before the stipulated time.

End



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Arts, Science & Commerce College
(Jalgaon)



NORTH MAHARASHTRA UNIVERSITY, JALGAON

MASTER IN BUSINESS MANAGEMENT (Computer Management) Structure

(w.e.f. June 2014)

Course Name: Master in Business Management (Computer Management)

Short Title of Degree: M.B.M. (Computer Management)

Faculty to which Assigned: Commerce and Management

Duration: 2 years full time

Pattern: semester

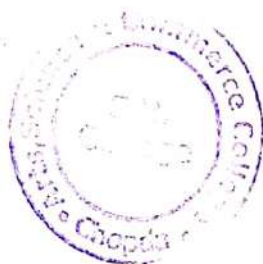
Examination Pattern: 60 (external) + 40 (internal)

Eligibility: Any Graduate

Medium of instruction: English

Objectives

- To prepare students for respectable career in the Software Design, Development & Testing. Also in Software Support, e-commerce, e-business, e-banking, e-services, e-governance etc. Or in business management domain where management is augmented by information communication technology.
- To develop inter-twining competence in the field of Commerce and Management, Computing Skill and Computational Tools.
- To develop students as Cyber Security experts, Information System Auditors.



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Arts, Science & Commerce College
Chopda (Dist. Jalgaon)

North Maharashtra University, Jalgaon

(NAAC Re Accredited 'B' Grade University)

FACULTY OF COMMERCE & MANAGEMENT

STRUCTURE OF MASTER IN BUSINESS MANAGEMENT (COMPUTER MANAGEMENT)

ACADEMIC YEAR: 2014-15

MBM (COMPUTER MANAGEMENT)

Semester-I and II (w.e.f- 2014-15)			
Paper	Semester-I	Paper	Semester-II
1.1	ICT Fundamentals & Operating Systems	2.1	Object Oriented Programming using C++
1.2	Web Designing & Web Tools	2.2	RDBMS with MS-SQL Server
1.3	Programming concepts using C++	2.3	Graphics & Animation
1.4	Financial Accounting for Manager (Tally ERP)	2.4	Software Engineering & Project Management
1.5	Office Automation	2.5	Management Information System & ERP
1.6	Lab - I (Based on 1.1 & 1.2)	2.6	Lab – III (Based on 2.1 & 2.2)
1.7	Lab – II (Based on 1.3 & 1.4)	2.7	Lab – IV (Based on 2.3 & 2.4)

Semester-III and IV (w.e.f. July 2015-16)			
Paper	Semester-III	Paper	Semester-IV
3.1	Database Administration with Oracle & D2K	4.1	ASP.NET
3.2	VB.Net	4.2	Scripting languages (PHP)
3.3	Business Management	4.3	Java Programming Language
3.4	E-Commerce and Website Management	4.4	Organizational Behavior & HRM
3.5	ICT Applications in Business	4.5	Lab - VII (Based on 4.1 & 4.2)
3.6	Lab - V (Based on 3.1 & 3.2)	4.6	Lab – VIII (Based on 4.3 & 4.4)
3.7	Lab – VI (Based on 3.3 & 3.4)	4.7	Project Work



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Chopda (Jalgaon)

Semester-I and II (w.e.f-July 2014-15)									
Paper	Semester-I	Maximum Marks			Paper	Semester-II	Maximum Marks		
		Int	Ext.	Total			Int	Ext.	Total
1.1	ICT Fundamentals & Operating Systems	40	60	100	2.1	Object Oriented Programming using C++	40	60	100
1.2	Web Designing & Web Tools	40	60	100	2.2	RDBMS with MS-SQL Server	40	60	100
1.3	Programming concepts using C++	40	60	100	2.3	Graphics & Animation	40	60	100
1.4	Financial Accounting for Manager (Tally ERP)	40	60	100	2.4	Software Engineering & Project Management	40	60	100
1.5	Office Automation	40	60	100	2.5	Management Information System & ERP	40	60	100
1.6	Lab - I (Based on 1.1 & 1.2)	40	60	100	2.6	Lab – III (Based on 2.1 & 2.2)	40	60	100
1.7	Lab – II (Based on 1.3 & 1.4)	40	60	100	2.7	Lab – IV (Based on 2.3 & 2.4)	40	60	100
Total		280	420	700	Total		280	420	700

Semester-III and IV (w.e.f.-July 2015-16)									
Paper	Semester-III	Maximum Marks			Paper	Semester-IV	Maximum Marks		
		Int	Ext.	Total			Int	Ext.	Total
3.1	Database Administration with Oracle & D2K	40	60	100	4.1	ASP.NET	40	60	100
3.2	VB.Net	40	60	100	4.2	Scripting languages(PHP)	40	60	100
3.3	Business Management	40	60	100	4.3	Java Programming Language	40	60	100
3.4	E-Commerce and Website Management	40	60	100	4.4	Organizational Behavior & HRM	40	60	100
3.5	ICT Applications in Business	40	60	100	4.5	Lab - VII (Based on 4.1 & 4.2)	40	60	100
3.6	Lab - V (Based on 3.1 & 3.2)	40	60	100	4.6	Lab – VIII (Based on 4.3 & 4.4)	40	60	100
3.7	Lab – VI (Based on 3.3 & 3.4)	40	60	100	4.7	Project Work	40	60	100
Total		280	420	700	Total		280	420	700



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 Arts, Science & Commerce College
 Chhapra (Bihar)



North Maharashtra University, Jalgaon

(NACC Accredited 'A' Grade University)

FACULTY OF COMMERCE & MANAGEMENT

M.B.M. (C.M.) Semester IV

4.7 Project Work

60 + 40 Pattern: External Marks 60 + Internal Marks 40=Maximum Total Marks:
100

Group Project is not allowed.

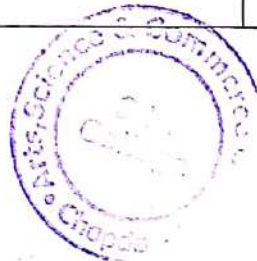
Use of CASE tool is expected. Use of testing tools is desirable.

Students have to submit Project Report in hard copies as well as in pdf format to the college & college should submit it to university.

Project Marking Scheme for MBM (Computer Management)

Marks are Out of 100 (Convert to out of 40 for internal and to out of 60 for external)

Criterion	Performance		Total marks	Marks given
Quantum of Work	Not enough for Project	0	10	
	Just right	3		
	Good amount of work done	6		
	Very-good amount of work	10		
Understanding of project/task objectives	No understanding of project/task objectives	0	10	
	Fair amount of understanding	3		
	Clear understanding of various aspects	6		
	Detailed understanding of the all aspects of the project	10		
Approach adopted	Technically inept, with no motivation to improve	0	10	
	Reasonable level of skills demonstrated	3		
	Technical competence demonstrated	6		
	Outstanding demonstration of technical skills, creative approach	10		
Effort	No evidence of interest in the work	0	10	
	Reasonably good effort	3		



3A
PRINCIPAL
Arts, Science & Commerce College
Chopda (Jalgaon)

	Conscientious effort	6		
	Excellent amount of effort	10		
Initiative and self-motivation	No Evidence	0	10	
	Evidence of some contribution of ideas	3		
	Significant contribution towards developing/refining/doing the task allocated	6		
	Sufficient evidence of handling the tasks independently and efficiently	10		
Achievement of objectives	Not much progress	0	10	
	Adequate but not enough	3		
	Good progress and made best use of the opportunities present	6		
	Outstanding performance	10		
Report Content	Not Submitted	0	10	
	Mostly sound but a lot of scope of improvement	3		
	A very well structured report	6		
	Comprehensive and detailed report	10		
Presentation	Not presented	0	15	
	Okay, but not an overall understanding of what constitutes a presentation	5		
	Well presented	10		
	Very well presented, with clear understanding of goals	15		
Q & A	Not participated	0	15	
	Could handle but confused	5		
	Could handle competently	10		
	Could handle professionally	15		



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 Arts, Science & Commerce, College
 Chopda (Saiganj)

**NORTH MAHARASHTRA UNIVERSITY,
JALGAON**

**M. A. / M. Sc.
GEOGRAPHY
SEMESTER IIIrd AND IVth**

**NEW SYLLABI
With Effect From
June 2018**

North Maharashtra University, Jalgaon

NEW SYLLABUS

M.A. / M. Sc. GEOGRAPHY

(With Effect from - June 2018)

Equivalence of Papers

Semester III rd			
Old Courses		New Courses	
Paper Code No.	Title of Paper	Paper Code No.	Title of Paper
Gg. 301 (A) Gg. 301 (B)	Regional Geography of U. S. A OR Regional Geography of China	Gg. 311 (A) Gg. 311 (B)	Regional Geography of U. S. A. OR Regional Geography of Asia
Gg. 302	Environmental Geography	Gg. 312	Environmental Geography
Gg. 303	Geographical Information System	Gg. 313	Geographical Information System
Gg. 304	Watershed Management and Planning	Gg. 314	Watershed Management and Planning
Gg. 305	Practical of Physical Geography with the help of GIS.	Gg. 315	Practical of Physical Geography with the help of GIS.
Semester IV th			
Old Courses		New Courses	
Gg. 401 (A) Gg. 401 (B) Gg. 401 (C)	Fluvial Geomorphology OR Industrial Geography OR Geography of Rural Settlement	Gg. 411 (A) Gg. 411 (B) Gg. 411 (C)	Fluvial Geomorphology OR Industrial Geography OR Geography of Rural Settlement
Gg. 402 (A) Gg. 402 (B) Gg. 402 (C)	Tropical Geomorphology OR Geography Of Trade and OR Transportation Urban Geography	Gg. 412 (A) Gg. 412 (B) Gg. 412 (C)	Tropical Geomorphology OR Geography Of Trade and OR Transportation Urban Geography
Gg. 403 (A) Gg. 403(B)	Research Methodology OR Dissertation	Gg. 413 (A) Gg. 413(B)	Research Methodology OR Dissertation
Gg. 404 (A) Gg. 404 (B) Gg. 404 (C)	Geography of Tourism OR Coastal Geomorphology OR Agricultural Geography	Gg. 414 (A) Gg. 414 (B) Gg. 414 (C)	Geography of Tourism OR Coastal Geomorphology OR Agricultural Geography
Gg. 405	Interpretation of Topographical Maps, Aerial Photographs, Satellite Imageries, Surveying.	Gg. 415	Interpretation of Topographical Maps, Aerial Photographs, Satellite Imageries, Surveying.

North Maharashtra University, Jalgaon

MA/M.Sc. Geography New Syllabus

Semester IV

Gg. 415: Gg. 415: PRACTICALS OF TOPOGRAPHICAL MAPS, AERIAL PHOTOGRAPHS, SATELLITE IMAGERIES & SURVEYING

W.E. F. JUNE 2018

Objectives:

- 1) To introduce the students with basic knowledge of topographical maps, aerial photographs and satellite imageries.
- 2) To know the importance and techniques of interpretation of topographical maps, aerial photographs and satellite imageries.
- 3) To identify and study the relationship existed between various natural and cultural features depicted in the maps, photographs and imageries.
- 4) To introduce the students with basic principles of GPS and it's functioning.
- 5) To give practical knowledge about survey using GPS receiver.
- 6) To prepare the survey layout using post-processing software.

No.	Topic	Sub Topic	Periods
1	Topographical Maps	1.1 Introduction to S.O.I topographical maps. 1.2 Types of topographical maps 1.3 Index numbers (International World Map Series) 1.4 Grid Reference 1.4.1 Four figure grid 1.4.2 Six figure grid 1.4.3 International grid reference 1.5 Interpretation of topographical maps (Any three) 1.5.1 Plain Region. 1.5.2 Plateau Region 1.5.3 Mountainous Region 1.5.4 Coastal Region 1.5.5 Desert Region	12
2	Aerial Photographs	Introduction to aerial photographs 2.1 Definition and Types 2.2 Geometry of aerial photographs 2.3 Methods of scale determination 2.4 Measurement of geographical area 2.5 Stereoscope, Stereo-pair, Stereoscopic overlapping and Stereoscopic vision. 2.6 Elements of photo interpretation 2.7 Interpretation of aerial photographs (at least two stereo-pairs)	12

3	Satellite Imageries	Introduction to satellite imageries Annotation strip on satellite imageries 3.1 Introduction to Latitude and Longitude 3.2 Calculation of Geographical Area 3.3 Interpretation of satellite imageries (at least two imageries)	12
4	Introduction to GPS	4.1 Global Positioning System (GPS) – 4.1.1 Introduction to GPS, 4.1.2 Functional Segments of GPS (Space, Control and User) 4.1.3 Errors of GPS 4.1.4 Applications of GPS 4.2 Differential Global Positioning System (DGPS) – The instrument, types, advantages and disadvantages and application of DGPS.	10
5	GPS Survey	5.1 Introduction and conversion of land measurement units used in Maharashtra and India. 5.2 Determination of Latitudes, Longitudes and Altitude of a point. 5.3 Survey with GPS of a field / plot / ground and preparation of contour map or layout map with area calculation using post processing software e.g. Surfer Software	14

Weightage of Marks

Unit No.	Marks
1	
2	
3	
4	
5	
6	
7	
University Assessment	60
College Assessment	40

NORTH MAHARASHTRA UNIVERSITY, JALGAON
NEW SYLLABI OF
M.A. /M.Sc. GEOGRAPHY
W.E.F. June 2017

SEMESTER - Ist

- Gg. 111: Principles of Economic Geography*
- Gg. 112: Principles of Population and Settlement Geography*
- Gg. 113- Principles of Climatology*
- Gg. 114 - Principles of Geomorphology*
- Gg. 115: Practical in Geography*

SEMESTER - IInd

- Gg. 211: Geographical Thoughts*
- Gg. 212: Social and Cultural Geography*
- Gg. 213: Remote Sensing*
- Gg. 214: Geo-Statistical Methods*
- Gg. 215: Practical of Computerize Data Analysis Techniques In
Geography*

**NEW SYLLABUS OF M.A. /M.Sc. GEOGRAPHY
SEMESTER - II**

Gg. 215: Practical of Computerize Data Analysis Techniques In Geography
(With effect from June 2017)
(10 Students per batch per week)

Unit No	Unit	Sub Unit	Periods
I	Introduction to Microsoft Excel work sheet and Presentation Techniques	A) Microsoft Excel: (a) Workbooks & Worksheets. (b) Data Analysis tools and Techniques: i) Advanced Filter Command, ii) IF Condition Command iii) Conditional Formatting iv) By default Insert Function (c) Development of Syntax on Formula Bar i) Mathematical and Statistical Operators ii) Application of Operators in formula development (d) Data Presentation Techniques B) Presentation Techniques: (a) Introduction to M.S. Power Point (b) Preparation of Slides (c) Maps and Graphs import techniques for slide show	06
II	Data Analysis Techniques in Population Geography	D) Density: i) Arithmetic Density of Population ii) Economic Density of Population iii) Agricultural Density of Population iv) Critical Density of Population E) Measures: i) Fertility Rates ii) Birth Rates: Crude & Age Specific iii) Mortality Rate iv) Child-Women Ratio v) Sex Ratio: Sex Ratio	10
III	Data Analysis Techniques in Rural Settlement Geography	A) Dispersion of Rural Settlements: i) Bernhard's method ii) Demangeon method iii) Debouvrie's method	08
IV	Data Analysis Techniques in Urban Geography	A) Growth of Urban Population B) Degree of Urbanization C) Functional Classification of Towns by Thompson D) Centrality Index by Christaller	10

V	Data Analysis Techniques in Agricultural Geography	A) Proportion of Cropped Land B) Crop Concentration by Bhatia C) Crop Diversification by Bhatia D) Crop Combination by Weaver's	08
VI	Data Analysis Techniques in Climatology	A) Intensity of Rainfall B) Presentation of Rainfall and Temperature Data C) Windrose	05
VII	Preparation of Project Report & Excursion Report	A) Project Report I) Each student should select individually any one unit of syllabus to analyze the data. II) Student should prepare at least 10 slides to present analyze techniques and result with the help graphs and charts. III) At the time of examination student should submit the CD of above project in the Department. i) Excursion Report	13

Instructions to Departments:

- 1) All Computers in the Lab. should be individual. (Lan System is not allowed).
- 2) Every students should have separate computer set in the computer Lab.(10 set of Computers for one batch).
- 3) Students will present the census report with the help of Power Point, obviously slide projector is must.

Examination System:

- 1) Data of question Paper will be supplied in the form of C.D.
- 2) Students will solve the questions in separate files of one workbook.
- 3) Examiners will assess the papers on screen by giving the marks to all questions.
- 4) All answer sheets will be loaded in the C.D. by the examiners.

Pattern of Question Papers:

- 3) All questions will be compulsory.
- 4) Data of question paper will be provided by paper setters.
- 5) Assessment of Project Report for 10 marks, Excursion Report-05 marks, viva-voce-05 marks.

Weightage - Equal Marks For Each Topic**Books:**

- R.B.Mandal: "Statistic for Geography and Social Science".
- Monkhouse: "Maps and Diagram".
- Masjid Husen "Agricultural Geography".
- Hudson F.S.(1976): "Geography of Settlement".
- Yeats, M.H. (1974): "An Introduction to Quantitative Analysis in Human Geography".
- Sing J. and Dhillon (1984) "Agricultural Geography".
- Sing R.L. "Readings in Rural Settlement Geography".
- Michael E. and E. Hulse: 'Transportation Geography'.
- Edward Arnold: "The Study of Urban Geography".
- George Omura: Mastering Auto CAD, BPB Publication, b14 Connautplace, New Delhi

North Maharashtra University, Jalgaon

NEW SYLLABUS

T.Y.B.A. GEOGRAPHY

(With Effect from - June 2018)

Select any one Group of Courses mentioned below
General Level
SEM - V G3 - Agricultural Geography SEM - VI G3 - Industrial Geography
OR
SEM - V G3 - Population Geography SEM - VI G3 - Political Geography
Special Level
SEM - V S3 - Environmental Geography SEM - VI S3 - Remote Sensing and GIS
OR
SEM - V S3 - Geographical Thoughts SEM - VI S3 - Geography of Resources
SEM - V S4 - Practical Geography - Weather Map, Weather Instruments and Elements of Map Reading SEM - VI S4 - Practical Geography - Geo- Statistical Methods

Job Opportunity for B. A. Geography Students

Urban Planner or Community Development: - Geography is a natural tie-in with urban or city planning. City planner's work on zoning, land use, new developments, from a gas station renovation to the development of whole new sections of urban area. You'll work with individual property owners, developers and other officials. If you are interested in this area, be sure to take Urban Geography and Urban Planning classes. An internship with a city planning agency is essential experience for this type of work.

Cartographer: - For those with cartography courses backgrounds may enjoy work as a cartographer. The news media, book publishers, atlas publishers, government agencies and others are looking for cartographers to help produce maps. This would likely require relocation.

NORTH MAHARASHTRA UNIVERSITY, JALGAON

T. Y. B. A. SEMESTER- VI
New Syllabus (60+40 Pattern)
(with effect from: June 2018)

S4 - PRACTICAL GEOGRAPHY - GEO-STATISTICAL METHODS
WORKLOAD - 06 Periods per week of per batch of 12 students.

Objectives: -

- To learn concepts and tools for working with data.
- To impart the ability to perform data management and analysis.
- To acquire skill of statistical reasoning and inferential methods.
- To learn the ability to describe, interpret and exploratory analysis of data by graphical and other means.

Unit No.	Topic	Sub-Topic	Periods
1	Introduction to Statistics	1.1 Meaning of Statistics 1.2 Significance of Statistical Methods in Geography 1.3 Sampling: Purposive, Random, Systematic and Stratified. 1.4 Sources of Data 1.4.1 Primary Data 1.4.2 Secondary Data 1.5 Variable 1.6 Frequency distribution 1.6.1 Histogram 1.6.2 Frequency Polygon 1.6.3 Ogive curve or Cumulative Frequency curve	14
2	Measures of Central Tendency and Dispersion	2.1 Measures of Central Tendency 2.1.1 Mean 2.1.2 Median 2.1.3 Mode 2.1.4 Quartile 2.2 Measures of Dispersion 2.2.1 Mean Deviation 2.2.2 Standard Deviation 2.2.3 Quartile Deviation	18

		2.2.4 Coefficient of Variation	
3	Correlation, Regression and Tests	3.1 Correlation and Regression 3.2.1 Spearman's Method 3.2.2 Karl Pearson's Method 3.2.3 Simple regression equation 3.2 Introduction to the Tests 3.3 Parametric and Non-Parametric Tests 3.2.1 Students ' t ' test 3.2.2 Chi - square test /x ² test.	22
4	Excursion / Village Survey / Project Report	Visit to a places of Geographic interest OR Village Survey OR Project Report. (Submission of its report. This report should be at least 12 pages)	6

Weightage of Marks		
Unit	Periods	Marks
1	14	12
2	18	20
3	22	18
4	06	10
Journal & Oral Excursion / Village Survey / Project Report	--	10
Total	60	--
University Assessment	--	60
College Assessment	--	40
Total Marks	--	100

**Kavayitri Bahinabai Chaudhari
North Maharashtra University,
Jalgaon**



**S. Y. B.A
(Semester III & IV)
Syllabus of Geography
(Under the Faculty of Science)**

Choice Based Credit System (CBCS)

With effect from June-2019

Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon

Under faculty of Science and Technology

S.Y.B.A. SEMESTER- IV

New Syllabus (CBCS Pattern)

(with effect from: June 2019)

Gg. 243 (DSE 2 B): PRACTICAL GEOGRAPHY

(Surveying)

(Work load – 06 Periods per week per batch of 12 students)

Total Credits – 3.

Internal Marks - 40

Total Clock Hours – 90

External Marks – 60

Objectives

1. To acquire knowledge of survey language and sense of technique of surveying.
2. To know the scale and distance of surveying.
3. To know how to draw layout by surveying of region.
4. To acquaint the students with basic knowledge and technique of ground survey.
5. To acquire the knowledge of survey instruments.
6. To provide basic information about mechanism of survey instruments.
7. To acquaint the knowledge how to use survey instruments.
8. To know the importance of surveying and survey instruments.

Unit	Topic	Sub-Topic	Hours
1.	Introduction to Surveying	<p>A) Introduction to Surveying: Definitions</p> <p>B) Basic principles of surveying.</p> <p>C) Types of Survey:</p> <ol style="list-style-type: none">a) Plane Surveyb) Geodetic Survey <p>D) Classification of Survey:</p> <ol style="list-style-type: none">a) According to purpose:<ol style="list-style-type: none">1) Topographical2) Cadastral3) Geodetic4) Engineering5) Railway6) Militaryb) According to instruments used:<ol style="list-style-type: none">1) Chain or Tape Survey2) Compass Survey3) Levelling Survey4) Theodolite Survey <p>E) Various Methods of deciding North direction: True, Magnetic and Grid North.</p>	30

2.	Plane Table Survey	<p>A) Plane Table Survey.</p> <p>B) Necessary Equipments of Plane Table Survey:</p> <ol style="list-style-type: none"> 1) The plane table with a tripod stand 2) Alidade 3) Chain or Tape 4) Spirit level 5) Trough Compass 6) Ranging Rods 7) Plumb bob 8) Drawing essential: Paper, pencil, rubber, drawing pins, pencil, sharpener, scale etc. <p>C) Methods of Plane Table Survey:</p> <ol style="list-style-type: none"> 1) Radiation Method 2) Intersection Method <p>D) Advantages and Disadvantages of Plane Table Survey.</p> <p>E) At Least Experiment of Actual Measurement of Piece of Land or Ground.</p>	40
3.	Study Tour/ Village Survey	Tour / Excursion or Village Survey Report	20

Weightage of Marks

Unit No	Weightage
1	15
2	25
3	20
Total	60

University Assessment (U.A)	60
College Assessment (C.A)	40
Total Marks	100

Internal Practical Test Exam.

- 1) Attendance and Behavioral: 10 Marks
- 2) Internal Test : 30 Marks

Total : 40 Marks

Note: The educational tour or village survey should be conduct and organized by the directions of Maharashtra Govt. rules and regulations.

North Maharashtra University

'A' Grade NAAC Re-Accredited (3rd Cycle)

Jalgaon-425001, Maharashtra, (India)



B.O.S. in Chemistry

M.Sc. Second Year (Organic Chemistry)

Semester III & IV

With effect from **June-2018**




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NORTH MAHARASHTRA UNIVERSITY, JALGAON

Syllabus for M.Sc. Part-II Organic Chemistry

(Semester - III & IV)

(With Effect from June 2018)

Aims:

Chemistry is a central subject of science. It is also closely related to daily life. The broad aims are to help students to

1. Acquire some knowledge of the empirical world.
2. Acquire an ability to solve problem.
3. Acquire an ability to think scientifically, independently and to make rational discussion.
4. Acquire an ability to communicate, using the language of chemistry.
5. Develop an appreciation of chemistry and its application in daily life.

Objectives:

1. To encourage students to take an active part in class.
2. To teach good laboratory practice and skills.
3. To teach students to analyze data from experiments or from other sources.
4. To acquire students a readiness in becoming responsible citizens in a changing world.
5. To provide students with some insight into future career prospect in the fields related to Chemistry.

Course Structure for Second Year

The following will be the structure for revised syllabus from June 2018 for Semester III and Semester IV

SEMESTER - III

Sub. Code: Title

CH-350: Organic Reaction Mechanism

CH-351: Spectroscopic Methods in Structure Determination

CH-352: Organic Stereochemistry

CH-353: Free radical, photochemistry, Pericyclic reaction and their applications

SEMESTER - IV

Sub. Code: Title

CH-450: Chemistry of Natural Products

CH-451: Synthetic Methods in Organic Chemistry

CH-452: Heterocyclic chemistry, Chiron approach and medicinal chemistry

Practical courses:

Sub. Code: Title

CH -O-2: Ternary mixture separation (Annual)

CH -O-3: Three stage preparations (Annual)

CH -O-4: Short Research Project (Annual)




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- Step 1: Benzophenone to benzophenone oxime (Addition)
Step 2: Benzophenone oxime to benzanilide (Beckman's rearrangement)
Step 3: Benzanilide to *p*-bromobenzanilide (Bromination)

Prep -7: Synthesis of Methyl Orange from Aniline

- Step 1: Aniline to sulphanilic acid (sulphonation)
Step 2: sulphanilic acid to Diazonium chloride (diazotization)
Step 3: Diazonium chloride to methyl orange (coupling reaction)

Prep -8: synthesis of Benzilic acid from Benzaldehyde

- Step 1: Benzaldehyde (using thiamine HCl) to Benzoin (condensation)
Step 2: Benzoin to Benzil (oxidation)
Step 3: Benzil to Benzilic acid (rearrangement)

All the students must submit the TLC for all the stages of preparation and a photo copy must be pasted in records.

REFERENCES:

1. Practical Organic Chemistry A.I.Vogel (Longmans)
2. Text Book of practical organic Chemistry F.G.Mann & B.C. Sanders.
3. A Manual of Practical Organic Chemistry Day Sitaramam & Govindachari
4. Organic Experiments L.F.Fieser.
5. Practical Organic Chemistry H.T.Openshaw
6. Systematic Identification of Organic Compounds, P.L.Shriener, R.C.Fuson & D.Y.Curtin.
7. Identification of Organic Compounds N.D.Cheronis & J.B.Entrikin
8. Advanced Organic Synthesis by R.S.Monson Academic Press
9. Comprehensive Practical Organic Chemistry: By V.K. Ahluwalia, R. Aggarwal, V.K. Ahluwalia

CH -O-4: Short Research Project

Literature survey, study of reactions, synthesis, mechanism, isolation of natural products, standardization of reaction conditions, new methods etc.

1. Project allotted to 100% students.
2. Industrial visit is compulsory for all students.
3. CH-O-4 course is annual.
4. 60 marks for External examination.

Marking Scheme:




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- i. Content – 10 mark
- ii. Characterization – 10
- iii. Research Work- 20
- iv. Power point presentation- 10 mark
- v. Result and Observation-10 mark

5. 40 marks internal examination.

Marking Scheme:

- i. Literature Survey- 10
- ii. Review Writing – 10
- iii. Presentation-10
- iv. Industrial Visit Report-10

6. Student should submit review report and visit report at the time of annual practical examination.




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North Maharashtra University, Jalgaon.




'A' Grade NAAC Re-Accredited
(3rd Cycle)

Bachelor of Science in Electronics B. Sc. (Electronics)

Syllabus

Third Year Degree Course
(T. Y. B. Sc.)
Semester CGPA Pattern

(w. e. f. June - 2017)


Head Department of Electronics
Arts, Science & Commerce College,
Chopda Dist.- Jalgaon 425107 (M.S.)





North Maharashtra University, Jalgaon.

T. Y. B. Sc. (Semester CGPA Pattern)

(w. e. f. June – 2017)

(ELE- Electronics, Int.- Internal, Ext.- External, Y-Year, S-Semester & C-Course number)

Paper	Semester	Course Code & Title	Marks		
			Periods	Int.	Ext.
1	I	ELE 351: Semiconductor Physics	60	40	60
	II	ELE 361: Electrodynamics	60	40	60
2	I	ELE 352: Basic Communication Systems	60	40	60
	II	ELE 362: Advanced Communication Systems	60	40	60
3	I	ELE 353: 8086 Microprocessor	60	40	60
	II	ELE 363: Microprocessor Interfacing Techniques and Advanced Microprocessors	60	40	60
4	I	ELE 354: The C Programming Language	60	40	60
	II	ELE 364: Numerical Simulation in Electronics	60	40	60
5	I	ELE 355: Microcontroller 8051	60	40	60
	II	ELE 365: Embedded Systems	60	40	60
6	I	ELE 356: Advanced Digital System Design	60	40	60
	II	ELE 366: Industrial and Power Electronics	60	40	60
7	I	ELE 357: General Lab – I Semiconductor Physics, Basic Communication, SPICE & VHDL	60	40	60
	II	ELE 367: General Lab - II Advanced Communication, Power and Industrial Electronics	60	40	60
8	I	ELE 358: μ P, μ C and C/MATLAB Lab – I Microprocessor, Microcontroller & C	60	40	60
	II	ELE 368: μ P, μ C and C/MATLAB Lab – II Microprocessor, Microcontroller & C	60	40	60
9	I	ELE 359: Project Part-I (Guidelines are provided in syllabus)	60	40	60
	II	ELE 369: Project Part-II (Guidelines are provided in syllabus)	60	40	60

Note:

1. Each course is having a weightage of four periods per week.
2. Each practical course is having a weightage of four periods per week.
3. Examination of practical course and project shall be conducted semester wise.

Chairman, BOS

Dean, Science Faculty

Head Department of Electornics
Arts, Science & Commerce College,
Chopda Dist.- Jalgaon 425107 (M.S.)

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T. Y. B. Sc. Electronics
Semester I & II: Paper IX
ELE 359 and ELE 369: Project
(Semester wise Evaluation)

Guidelines

During project work, follow the following guidelines –

- i. Title of the project must be well defined.
- ii. Planning of the project must be specified.
- iii. Aim, Objectives, Designing and theoretical background of the work should be specified in detail.
- iv. Actual work done must be reported along with experimental procedure.
- v. There must be observations, results and conclusions of the project work.
- vi. In case of the projects related to the development of computer software algorithm, program strategy, module wise description etc must be provided.
- vii. Applications of the work must be specified clearly.
- viii. Further extension / future scope of the work may be suggested for better outcome of the project.
- ix. References must be specified

Semester wise planning of the project work –

Semester	Course	Work assigned	Marks	Total
V	ELE 359	1. Selection of Project and Literature Survey 2. Study Tour: Industrial/Research Lab Visit 3. Presentation of the Project Progress Report	20 20 20	60
VI	ELE 369	1. Fabrication and Testing of the Project Circuit 2. Preparation of the Project Report 3. Final Presentation of the Project	20 20 20	60

Student should do a project during two semesters and submit final project report at the end of Semester VI examination.


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**NORTH MAHARASHTRA UNIVERSITY,
JALGAON**



**'A' Grade
NAAC Re-Accredited
(3rd Cycle)**

SYLLABUS

**Master of Science
in
Microbiology**

**Part-II
(Semester – III and IV)**

w. e. f. June 2016 -2017

NORTH MAHARASHTRA UNIVERSITY, JALGAON

Syllabus for M.Sc. (Part- II) Microbiology

Effective from June 2016 -2017

Subject code	Title of the paper	Duration (Hrs./Wk)	Max. Marks	Exam. Time (Hrs.)
SEMESTER – III				
Theory courses				
MB-301	Applied and Environmental Microbiology	04	100	03
MB-302	Molecular Biology and Bioinformatics	04	100	03
MB-303	Pharmaceutical Microbiology	04	100	03
Laboratory courses				
MB-304	Methods in Biostatistics and Bioinformatics	04+04	100	06
MB-305	Methods in Applied Microbiology	04+04	100	06
SEMESTER – IV				
Theory courses				
MB-401	Fermentation Technology	04	100	03
MB-402	Applied Molecular Biology	04	100	03
MB-403	Agricultural Microbiology	04	100	03
Laboratory courses				
MB-404	Methods in Biotechnology	04+04	100	06
MB-405	Laboratory course (Project Dissertation)	04+04	100	06

Instructions:

1. Each theory course has to be completed in 50 lectures of 60 min duration each in one semester.
2. Semester III and IV will have THREE theory courses and TWO Practical courses.
3. Practical examination of each laboratory course shall be conducted at the end of each respective semester.
4. Each course will be of 100 marks (40 marks internal and 60 marks-external examinations).
5. Seminar activity in each semester should be conducted and made compulsory to each student.
6. The student will have to carry out the research based project work in lieu of practical in the fourth semester in the department.




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MB-405 : Laboratory course (Project Dissertation)

The project allotted during the Forth semester and it is expected that the students will design experiments and collect experimental data to deduce conclusions. At the end, they will submit a detailed thesis for evaluation. The students should be introduced to research methodology in the beginning through few lectures.

The approach towards the execution of project should be as follows:

1. Selection of topic relevant to priority areas of biotechnology.
2. Collection of literature from libraries, internet, on-line journals, etc.
3. Planning of research experiments
4. Performing the experiments with scientific and statistical acceptability.
5. Presentation of observations and results.
6. Interpretation of results and drawing important conclusions.
7. Discussion of obtained results with respect to literature reports.
8. Preparation of report (thesis) containing introduction, materials and methods, results and discussion, conclusions, bibliography.
9. Presentation of research data in a bound form.

Epilogue

Skills imparted: The curriculum is designed to instill basic and applied knowledge of the subject to the students. One of the major objectives considered during designing is to make technically educated human resource. Basic microbiology, molecular biology, microbial physiology may help to find out unseen facts in various environmental, agriculture, food and pharmaceutical sectors. The subjects like genetic engineering, applied microbiology, microbial biochemistry, pharmaceutical microbiology, fermentation technology and biochemical techniques are designed to impart theoretical and practical knowledge of modern scientific advances in the field. Further to enhance skillful human resource with precision, the course like biostatistics and bioinformatics are included. The subject like Microbial biotechnology would give not only the practical knowledge of industry and industrial processes but also make aware the students with the global environmental problems like pollutions, contamination and bioremediation. Practical courses are based on theory courses and are designed to improve research oriented skills of students.

Job opportunity: The designed curriculum offers job opportunities in various sectors like,

- Pharmaceutical industry : Clinical, medicine, vaccine, QC division
- Biotech industry: Recombinant product, QC, QA
- Agrochemical and pesticide industry
- Chemical industry: synthesis, testing
- Environmental protection industry and Agencies
- Research leading to Ph. D. degree
- Self entrepreneurship
- Marketing of biological and pharmaceutical products




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**Kavayitri Bahinabai Chaudhari
North Maharashtra University, Jalgaon**

Syllabus

M. Sc. II (Semester III and IV)

Microbiology

(Affiliated Colleges)

June 2019 -2020

M. Sc. Part: II Microbiology

Prelude

The need for trained and skilled human resource is a prerequisite in the higher education. This coerces the necessity to acquire thorough knowledge of theoretical concepts and hands-on laboratory methods of the subject. On this streak, the present syllabus of M.Sc. part II in the subject Microbiology has been prepared as per the guidelines of UGC and cultivate a theoretical and practical know how of different fields of Microbiology. The contents of syllabus have been prepared to accommodate the fundamental aspects as well as advanced developments in various disciplines of Microbiology and to complement the needs of various applied sectors of Microbiology. Beside this, the graduate students will be enlightened with knowledge in the newer areas of Environmental, Molecular, Pharmaceutical, Agricultural Microbiology, etc. Post graduate students will surely have an urge to endure research studies in Microbiology and contribute significantly in the development.

The present syllabus is restructured to cater the present and future needs of Microbiology in research field, Industrial Sector, Environmental Sector, etc., with more emphasis on imparting hands-on skills. Hence, the curriculum is endowed with more experiments that shall run hand-in-hand with theory. The extensive appendix is furnished for each course to support know how and suffice the inquisitive of the students. The detailed syllabus of each paper is appended with a list of suggested readings.

Learning objectives

To acquaint students with:

- Basic concepts, principles and methods of molecular biology, bioinformatics, biostatistics
- Concepts in food microbiology and food intoxications
- Solid and liquid waste management, bioconversion of lignocellulose waste, Bioremediation of xenobiotics
- Mechanisms in molecular biology, genome expression of microorganisms and bioinformatics tools
- Trends in pharmaceutical microbiology, synthetic antimicrobial agents, and pharmaceutical products
- Regulation and quality assurance in pharmaceutical and food microbiology
- Concepts in drug design and delivery, IPR, rDNA technology, proteomics
- Process in fermentation technology viz. upstream, fermentation and downstream protocols
- Basic and applied aspects of microbial ecology: pathogen interaction, biocontrol of plant diseases.

Course structure

Duration: The duration of M.Sc. (Microbiology) degree program shall consist of TWO years divided into four semesters. Each semester consists of 90 working days.

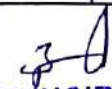
Medium of instruction: The medium of instruction for the course shall be English.

Eligibility: B.Sc. with principle subject Microbiology.

Structure of syllabus for M.Sc. (Part- II) Microbiology

Subject code	Title of the paper	Duration (Hrs./Wk)	Max. Marks	Exam. Time (Hrs.)
Semester- III Theory courses				
MB-301	Applied and Environmental Microbiology	04	100	03
MB-302	Molecular Biology and Bioinformatics	04	100	03
MB-303	Pharmaceutical Microbiology	04	100	03
Semester - III Laboratory courses				
MB-304	Methods in Biostatistics and Bioinformatics	04+04	100	06
MB-305	Methods in Applied Microbiology	04+04	100	06
Semester - IV Theory courses				
MB-401	Fermentation Technology	04	100	03
MB-402	Applied Molecular Biology	04	100	03
MB-403	Agricultural Microbiology	04	100	03
Semester - IV Laboratory courses				
MB-404	Methods in Biotechnology	04+04	100	06
MB-405	Laboratory course (Project Dissertation)	04+04	100	06




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Suggested readings:

- Aneja KR (2007). Experiments in microbiology, plant pathology and biotechnology. New Age International, New Delhi
- Benson HJ (2002). Microbiological applications; a laboratory manual in general microbiology, 8th Edition, McGraw Hill, New York
- Cappucino J and Sherman NC (1992) Microbiology-A Laboratory Manual, The Benjamin- Cummings Publ. Co., Inc., New York.
- Davis LG, Dibner MD and Battey JF (1986) Basic Methods in Molecular Biology, Appleton and Lange, Norwalk (ISBN: 0-8385-0582-1).
- Hewitt W (1977) Microbiological Assay, Academic Press, New York.
- Janarthanan S and Vincent S (2007) Practical Biotechnology, Universities Press (India) Pvt. Ltd., Hyderabad (ISBN: 13-978-81-7371-582-2).
- Kalaichelvan PT (2006) Microbiology and Biotechnology: A Laboratory Manual, MJP Publ., Chennai (ISBN: 81-8094-008-X).
- Mudili J (2007) Introductory Practical Microbiology, Narosa Publ. House Pvt. Ltd., New Delhi (ISBN: 978-81-7319-744-4).
- Primrose SB and Wardlow, AC (1982) Source Book for Experiments for the Teaching of Microbiology, Academic Press, London (ISBN: 0-12-565680-7).
- Sambrook and Russell Molecular Cloning Vol I, II and III, CSHL Press, USA.
- Sawhney SK and Singh R (2001) Introductory Practical Biochemistry, Narosa Publ. House, Chennai.
- Schmauder HP Schweizer M and Schewizer LM (2003) Methods in Biotechnology, Taylor and Francis Ltd., London (ISBN: 0-7484-0430-9).
- Tablot N (2005) Molecular and Cellular Biology of Filamentous Fungi, Practical Approach, Indian Edn., Oxford University Press, New Delhi (ISBN: 0-19-567943-1).
- White D (2000) The Physiology and Biochemistry of Prokaryotes, Oxford University Press, Oxford.

MB-405: Laboratory course (Project Dissertation)

The project is allotted during the Forth semester. The students will get an opportunity to become a part of ongoing research activities in the respective College. The student will explore and gain experience in different sectors of biotechnology viz agriculture, food, medicine and pharmaceutical. The students will acquire skill to write, compile and analyze data, and present the detailed technical/scientific report. At the end of successful project semester training, potentially the students become employable in the industries/organizations.

It is expected that the students will design experiments and collect experimental data to deduce conclusions. At the end, they will submit a detailed thesis for evaluation. The students should be introduced to research methodology in the beginning through few lectures.

The approach towards the execution of project should be as follows:

1. Selection of topic relevant to priority areas of biotechnology.
2. Collection of literature on the topic of research from libraries, internet, on-line journals, Planning of research experiments
3. Performing the experiments with scientific and statistical acceptability.
4. Presentation of observations and results.
5. Interpretation of results and drawing important conclusions.
6. Discussion of obtained results with respect to literature reports.
7. Writing monthly progress report



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8. Preparation of report (Dissertation) containing introduction, materials and methods, results and discussion, conclusions, bibliography and submission of at least 3 copies (1 copy retained in the department and after examination submitted to Library, 1 copy submitted to the guide and 1 copy kept with the candidate).
9. Presentation of research data during university examination and submission of project dissertation in a bound form.

1. **Internal examination (40 marks):** Components of continuous internal assessment
Submission of monthly progress report and signed by supervisor (at least 4 reports) (2 marks per report = 8 marks), Literature collected, experiment planning and design (10 marks), Experiments conducted (10 marks), outcome of the experiments and viva (8 marks) and regular attendance (4 marks) recorded: Research Supervisor
2. **External examination (60 marks) and Components of external assessment:**
Subject matter (5 marks), Review of literature (10 marks), Writing of dissertation submitted in bound form at the time of examination (Title page, Certificate, Plagiarism report, Main content: Abstract, Introduction, Literature, Materials and methods, results and discussion and conclusion with relevant references) (15 marks), Presentation structure (PPT format) (8 marks), Overall presentation reflecting contribution of work (4 marks), Response to questions (15 marks).

Suggested readings: Refer to the journals, reference books, abstracts etc. related to topic

Epilogue

Skills imparted:

The curriculum is designed to instill basic and applied knowledge of the subject to the students. One of the major objectives considered during designing is to make technically educated human resource. Basic microbiology, molecular biology, microbial physiology may help to find out unseen facts in various environmental, agriculture, food and pharmaceutical sectors. The subjects like genetic engineering, applied microbiology, microbial biochemistry, pharmaceutical microbiology, fermentation technology and biochemical techniques are designed to impart theoretical and practical knowledge of modern scientific advances in the field. Further to enhance skillful human resource with precision, the course like biostatistics and bioinformatics are included. The subject like Microbial biotechnology would give not only the practical knowledge of industry and industrial processes but also make aware the students with the global environmental problems like pollutions, contamination and bioremediation. Practical courses are based on theory courses and are designed to improve research oriented skills of students.

Job opportunity:

The designed curriculum offers job opportunities in various sectors like,

- Pharmaceutical industry : Clinical, medicine, vaccine, QC division
- Biotech industry: Recombinant product, QC, QA
- Agrochemical and pesticide industry
- Chemical industry: synthesis, testing
- Environmental protection industry and Agencies
- Research leading to Ph. D. degree
- Self entrepreneurship



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PRINCIPAL
Arts, Science & Commerce, College
Chopta (Jalgaon)

Faculty of Science and Technology

**Kavayitri Bahinabai Chaudhari
North Maharashtra University, Jalgaon**



1990
'A' Grade
NAAC Re-Accredited
(3rd Cycle)

**Syllabus
For**

T. Y. B.Sc. (Electronics)

(As per Choice Based Credit System)

(With effect from June - 2020)

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Head Department of Electronics
Arts, Science & Commerce College,
Chopda Dist., Jalgaon 425107 (M.S.)





KBC North Maharashtra University, Jalgaon

Class: T. Y. B. Sc.

Subject: Electronics

Choice Base Credit System (With effect from June 2020)

The Board of Studies in Electronics in its meeting has unanimously accepted the revised syllabus (as per CBCS pattern) prepared by different committees, discussed, and finalized for T.Y.B.Sc. The titles of the papers for T.Y.B.Sc. (Electronics) are as given below:

Structure of curriculum of T. Y. B. Sc. (Electronics)

Semester V

Discipline	Course Type	Course Code	Course title	Credits	Hours/week (Clock hours)	Total Teaching hours	Marks (Total 100)	
							CA	UA
DSC	Core I	ELE-501	Semiconductor Electronics	3	3	45	40	60
	Core II	ELE -502	Advanced Digital System Design using VHDL	3	3	45	40	60
	Core III	ELE-503	Advanced Microprocessors	3	3	45	40	60
	Core IV	ELE-504	Electronic Instrumentation	3	3	45	40	60
DSC Skill Enhancement Course (SEC)	Skill Based	ELE-505	Medical Electronics	3	3	45	40	60
DSC Elective course	Elective Course (Any one)	ELE-506 (A)	Embedded C	3	3	45	40	60
		ELE-506 (B)	Basics Fiber Optic Communication					
DSC	Core (Practical)	ELE-507	Practical Lab I	2	4 (per batch)	60	40	60
		ELE-508	Practical Lab II	2	4 (per batch)	60	40	60
		ELE-509	Project Part I	2	4 (per batch)	60	40	60
Non Credit Audit Course	Elective audit course (Any one)	AC-501 : A	NSS	No credit	2	30	100	--
		AC-501 : B	NCC					
		AC-501 : C	Sports					

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Semester VI

Discipline	Course Type	Course Code	Course title	Credits	Hours/week (Clock hours)	Total Teaching hours	Marks (Total 100)	
							CA	UA
DSC	Core I	ELE-601	Power Electronics	3	3	45	40	60
	Core II	ELE-602	Consumer Electronics	3	3	45	40	60
	Core III	ELE-603	Microprocessor Interfacing Techniques	3	3	45	40	60
	Core IV	ELE-604	Computer Network	3	3	45	40	60
DSC Skill Enhancement Course (SEC)	Skill Based	ELE-605	Embedded Systems	3	3	45	40	60
DSC Elective Course	Elective Course (Any one)	ELE-606 (A)	Electrodynamics	3	3	45	40	60
		ELE-606 (B)	Antenna & Wave Propagation					
DSC	Core (Practical)	ELE-607	Practical Lab I	2	4 (per batch)	60	40	60
		ELE-608	Practical Lab II	2	4 (per batch)	60	40	60
		ELE-609	Project Part II	2	4 (per batch)	60	40	60
Non Credit Audit Course	Elective audit course (Any one)	AC-601 : A	Soft skill	No credit	2	30	100	--
		AC-601 : B	Yoga					
		AC-601 : C	Practicing Cleanliness					

CA: Class assessment (Internal examination); UA: University assessment

Note: The Study tour: Industrial visit/Research lab visit is compulsory for the students of T.Y.B.Sc. (Electronics)


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 Chonda Dist.- Jalgaon 425107 (M.S.)


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ELE – 509: Project Part I

Total Hours: 60

Credits: 4


During project work, follow the following guidelines –

1. Title of the project must be well defined.
2. Planning of the project must be specified.
3. Aim, Objectives, Designing and theoretical background of the work should be specified in detail.
4. Actual work done must be reported along with experimental procedure.
5. There must be observations, results and conclusions of the project work.
6. In case of the projects related to the development of computer software algorithm, program strategy, module wise description etc must be provided.
7. Applications of the work must be specified clearly.
8. Further extension / future scope of the work may be suggested for better outcome of the project.
9. References must be specified

Semester wise Planning & Evaluation of the project work

Work assigned	Marks	Total
1. Selection of Project and Literature Survey	20	60
2. Study Tour: Industrial/Research Lab Visit	20	
3. Presentation of the Project Progress Report	20	




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ELE – 609: Project Part II

Total Hours: 60

Credit: 4


During project work, follow the following guidelines –

1. Title of the project must be well defined.
2. Planning of the project must be specified.
3. Aim, Objectives, Designing and theoretical background of the work should be specified in detail.
4. Actual work done must be reported along with experimental procedure.
5. There must be observations, results and conclusions of the project work.
6. In case of the projects related to the development of computer software algorithm, program strategy, module wise description etc. must be provided.
7. Applications of the work must be specified clearly.
8. Further extension / future scope of the work may be suggested for better outcome of the project.
9. References must be specified

Semester wise Planning & Evaluation of the project work

Work assigned	Marks	Total
1. Fabrication and Testing of the Project Circuit	20	60
2. Preparation of the Project Report	20	
3. Final Presentation of the Project	20	




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FACULTY OF SCIENCE & TECHNOLOGY
KAVAYITRI BAHINABAI CHAUDHARI NORTH
MAHARASHTRA UNIVERSITY, JALGAON



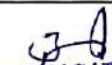
'A' Grade
NAAC Re-Accredited
(3rd Cycle)

SYLLABUS
FOR
T. Y. B. Sc. (PHYSICS)

(AS PER CHOICE BASED CREDIT SYSTEM PATTERN OF UGC)

(With effect from June - 2020)




PRINCIPAL
Arts, Science & Commerce, College
Chanda (Jalgaon)

BOS (PHYSICS)-Faculty of Science & Technology
Kavayitri Bahinabai Chaudhari
North Maharashtra University, Jalgaon
 Class: T. Y. B. Sc. Subject: Physics
 Choice Base Credit System (With effect from June 2020)

The Board of Studies in Physics has unanimously accepted the revised syllabus (as per CBCS pattern) prepared by different committees, discussed and finalized in the **Online Workshop on Curriculum Development in Physics at T. Y. B. Sc.** held on 15th and 16th May 2020.

The titles of the papers for T.Y.B.Sc. (Physics) are as given below:

Sem	Course type	Course code	Course title	Credits	Total hrs /week	Total teaching periods	Total marks	
							CA	UA
V	Discipline specific Course (DSC)	PHY 501	Mathematical Physics	3	3	45	40	60
		PHY502	Solid State Physics	3	3	45	40	60
		PHY 503	Atomic and molecular physics	3	3	45	30	60
		PHY 504(A) Or PHY 504(B)	Electronics-II Or Instrumentation -II	3	3	45	40	60
	Skill Enhancement course (SEC)	PHY 505	Solar Energy and applications	3	3	45	40	60
	DSE Elective course (Any one)	PHY 506(A) PHY 506(B) PHY 506(C) PHY 506(D) PHY 506 (E)	Technical Electronics- I or Refrigeration and Air conditioning- I or Vacuum Technology-I or Microprocessor-I or Programming in C++ I	3	3	45	40	60
	DSC CORE Practicals	PHY 507	Physics Practical I	2	4 (per batch)	60	40	60
		PHY 508	Physics Practical II	2	4 (per batch)	60	40	60
		PHY 509	Physics Practical III or Project	2	4 (per batch)	60	40	60
	Non credit audit course (Any one)	AC 501(A)	NCC	No credit	2	30	100	
AC 501(B)		NSS						
AC 501 (C)		Sports						
Total credit				24				



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Sem	Course type	Course code	Course title	Credits	Total hrs /week	Total teaching periods	Total marks	
							CA	UA
VI	Discipline specific Course (DSC)	PHY 601	Quantum mechanics	3	3	45	40	60
		PHY602	Material Science	3	3	45	40	60
		PHY 603	Nuclear Physics	3	3	45	30	60
		PHY 604	Modern Physics	3	3	45	40	60
	Skill Enhancement course (SEC)	PHY 605	Basic Instrumentation Skills	3	3	45	40	60
	DSE Elective course (Any one)	PHY 606 (A)	Technical Electronics- I or Refrigeration and Air conditioning- II or Vacuum Technology-II or Microprocessor-I or Programming in C++ II	3	3	45	40	60
		PHY 606 (B)						
		PHY 606 (C)						
		PHY 606 (D)						
		PHY 606 (E)						
	DSC CORE Practicals	PHY 607	Physics Practical I	2	4 (per batch)	60	40	60
		PHY 608	Physics Practical II	2	4 (per batch)	60	40	60
		PHY 609	Physics Practical III or Project	2	4 (per batch)	60	40	60
Non credit audit course (Any one)	AC 601(A)	Soft skill	No credit	2	30	10	0	
	AC 601(B)	Yoga						
	AC 601(C)	Practicing Cleanliness						
Total credit				24				

Note: The industrial/study tour is compulsory for students of T. Y. B. Sc. (Physics).



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Chopda (Jaigson)

Semester V: (LAB): Physics paper VII
PHY 509: Project -I
(Credits: 04) :(60 Marks)

ASSESSMENT OF PROJECT- FIRST TERM:

Student should submit a Progress Report on the work done by him/her during the First Phase of the project i.e. on the topics :

1. Project Selection
2. Literature Search Strategy
3. Literature Review
4. Project Planning.
5. Experimental work (30 to 40 %)

Instructions:

1. The topic of project of the first term must be continued in the second term.
2. The project report of first term should be maintained and should be produced to examiner of second term.
3. The student will have to give a seminar on the project topic in the practical exam.
4. The student must perform his project presentation by PPT on LCD projector.




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Semester VI: (LAB): Physics paper VIII
PHY 609: Project II
(Credits: 04) :(60 Marks)

ASSESSMENT OF PROJECT- SECOND TERM:

Student should submit a Final Project Report on the work done by him/her during the First and Second Phase of the Project i.e. on the topics:

1. Experimental work. (remaining further work in continuation with the work in the first term)
2. Characterize the samples, if any.
3. Discussion of the results.
4. Conclusions.

Instructions:

1. The topic of project of the first term must be continued in the second term.
2. The project report of first term should be maintained and should be produced to examiner of second term.
3. The student will have to give a seminar on the project topic in the practical exam.
4. The student must perform his project presentation by PPT on LCD projector.




PRINCIPAL
Arts, Science & Commerce, Colleg-
Chopda (Jalgaon)

W.E.F. 2016-17



NORTH MAHARASHTRA UNIVERSITY, JALGAON


Faculty of Commerce and Management

Syllabus

**BACHELOR IN BUSINESS ADMINISTRATION
(TYBBA)**

With effect from June- 2016-17




PRINCIPAL
Arts, Science & Commerce, College
Chopda (Jalgaon)

NORTH MAHARASHTRA UNIVERSITY, JALGAON
Faculty of Commerce & Management
Structure of Bachelor in Business Administration: B.B.A.
(With effect from June- 2014-15)

First Year B.B.A. (New Structure W.E.F. June: 2014-15)			
Paper	SEMESTER-I	Paper	SEMESTER-II
A1.1	Foundation Course for Managers	A2.1	Financial Accounting and costing
A1.2	Professional Communication-I	A2.2	Professional Communication -II
A1.3	Principles of Management	A2.3	Organisational Behavior
A1.4	Principles of Economics	A2.4	Managerial Economics
A1.5	Computer Fundamentals & Office Automation	A2.5	Internet & Application
A1.6	Practical on Professional Communication -I	A2.6	Practical on Professional Communication-II
A1.7	Practical on Office Automation	A2.7	Practical on Internet & Application

Second Year B.B.A. (New Structure W.E.F. June: 2015-16)			
Paper	SEMESTER-III	Paper	SEMESTER-IV
A3.1	Mathematics & Statistics for Managers	A4.1	Research Methodology
A3.2	Corporate governance	A4.2	Corporate Law
A3.3	Career Management & Counseling	A4.3	ICT in Taxation
A3.4	Production & Materials Management	A4.4	Cyber Crime & Security Law
A3.5	Corporate Accounting	A4.5	Cost Accounting
A3.6	Practical on Tally ERP 9.0	A4.6	Practical based on E - Commerce
A3.7	Practical based on Advanced Excel	A4.7	Practical on ICT in Taxation

Third Year B.B.A. (New Structure W.E.F. June: 2016-17)			
Paper	SEMESTER-V	Paper	SEMESTER-VI
A5.1	Entrepreneurship Development	A6.1	Auditing Practices
A5.2	Soft Skills Development	A6.2	Mercantile Laws
A5.3	Human Resource Management	A6.3	Human Resource Management
A5.4	Marketing Management	A6.4	Marketing Management
A5.5	Financial Management	A6.5	International Finance
A5.6	Practical in Soft Skills Development	A6.6	Practical on Cases In Management
A5.7	Field Work	A6.7	Project Report



S.R.
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 Arts, Science & Commerce College
 Chopta (Jalgaon)

NORTH MAHARASHTRA UNIVERSITY, JALGAON
Faculty of Commerce & Management
 Structure

Bachelor Programme in Business Administration: T.Y.B.B.A.
 (With effect from June- 2016-17)

First Year B.B.A. (New Structure W.E.F. June: 2014-15)		
Paper	SEMESTER-I	Paper
A1.1	Foundation Course for Managers	A2.1
A1.2	Professional Communication-I	A2.2
A1.3	Principles of Management	A2.3
A1.4	Principles of Economics	A2.4
A1.5	Computer Fundamentals & Office Automation	A2.5
A1.6	Practical on Professional Communication -I	A2.6
A1.7	Practical on Office Automation	A2.7

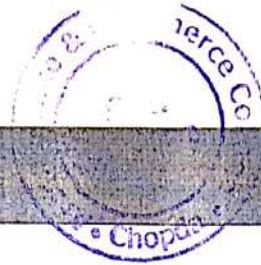
Second Year B.B.A. (New Structure W.E.F. June: 2015-16)		
Paper	SEMESTER-III	Paper
A3.1	Mathematics & Statistics for Managers	A4.1
A3.2	Corporate governance	A4.2
A3.3	Career Management & Counseling	A4.3
A3.4	Production & Materials Management	A4.4
A3.5	Corporate Accounting	A4.5
A3.6	Practical on Tally ERP 9.0	A4.6
A3.7	Practical based on Advanced Excel	A4.7

Third Year B.B.A. (New Structure W.E.F. June: 2016-17)		
Paper	SEMESTER-V	Paper
A5.1	Entrepreneurship Development	A6.1
A5.2	Soft Skills Development	A6.2
A5.3	Human Resource Management	A6.3
A5.4	Marketing Management	A6.4
A5.5	Financial Management	A6.5
A5.6	Practical in Soft Skills Development	A6.6
A5.7	Field Work	A6.7




PRINCIPAL
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 Chhapda (Jalgaon)

W.E.F. 2017-18



NORTH MAHARASHTRA UNIVERSITY, JALGAON

'A' Grade NAAC Re-Accredited

FACULTY OF COMMERCE & MANAGEMENT



Structure, Equivalence and Syllabus

of

Bachelor in Business Administration

(BBA)

(Semester 60-40 Pattern)

With effect from June- 2017-18



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PRINCIPAL
Arts, Science & Commerce College
Chandrapur (Jalgaon)

Third Year BBA– (Sem V & VI) w.e.f.2019-20

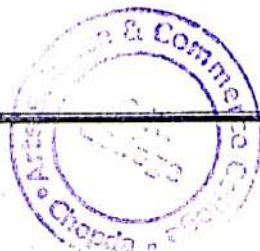
Paper	Semester V	Paper	Semester VI
A5.1	International Business Management	A6.1	Management of Services
A5.2	Entrepreneurship Development	A6.2	Family Business Management
A5.3	Case Studies in Management	A6.3	Cyber Security & Laws
	Elective Group-(A) Financial Management		Elective Group-(A) Financial Management
A5.4(A)	Banking and Insurance	A6.4(A)	Auditing Practices
A5.5(A)	Capital, Money and Commodity Market	A6.5(A)	Investment Banking
	Elective Group-(B) Marketing Management		Elective Group-(B) Marketing Management
A5.4(B)	Customer Relationship Management	A6.4(B)	e-commerce and Digital Marketing
A5.5(B)	Retail Management	A6.5(B)	Product and Brand Management
	Elective Group-(C) Human Resource Management		Elective Group-(C) Human Resource Management
A5.4(C)	Recruitment and Selection	A6.4(C)	Training & Development
A5.5(C)	Industrial Relations	A6.5(C)	Performance Management
A5.6	Practicals on Employability Skills-I	A6.6	Practicals on Employability Skills-II
A5.7	Practicals based on e-Commerce	A6.7	Project Report based on Elective Group




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Semester-III			
Old Subject		New Subject	
Code	Subject	Equivalence Code	Equivalence Subject
A3.1	Mathematics & Statistics for Managers	A3.1	Mathematics and Statistics for Managers
A3.2	Corporate Governance	A3.3	Business & Corporate Laws
A3.3	Career Management And Counselling	A3.5	Management Information Systems & ERP
A3.4	Production & Materials Management	A4.4	Production & Materials Management
A3.5	Corporate Accounting	A3.2	Corporate Accounting & Costing
A3.6	Practicals on Tally ERP 9.0	A4.6	Practicals on Tally ERP
A3.7	Practicals Based on Advanced Excel	A3.7	Practicals on Advanced Excel

Semester-IV			
Old Subject		New Subject	
Code	Subject	Equivalence Code	Equivalence Subject
A4.1	Research Methodology	A4.1	Business Research Methods
A4.2	Corporate Law	A3.4	Management of Small Scale Industries
A4.3	ICT in Taxation	A4.2	Direct & Indirect Taxes in India
A4.4	Cyber Crime & Security Law	A4.3	Human Resource Management
A4.5	Cost Accounting	A4.5	Financial Management
A4.6	Practicals Based on E-Commerce	A3.6	Practicals on Management of Small Scale Industries
A4.7	Practicals on ICT in Taxation	A4.7	Practicals on Tax Base Software



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PRINCIPAL
 Arts, Science & Commerce College
 Chopda (Dang)

Semester-V			
Old Subject		New Subject	
Code	Subject	Equivalence Code	Equivalence Subject
A5.1	Entrepreneurship Development	A5.2	Entrepreneurship Development
A5.2	Soft Skill Development	A5.1	International Business Management
A5.3	Human Resource Management	A5.4(C)	Recruitment and Selection
A5.4	Marketing Management	A5.5(B)	Retail Management
A5.5	Financial Management	A5.4(A)	Banking and Insurance
A5.6	Practicals in Soft Skill Development	A5.6	Practicals on Employability Skills-I
A5.7	Field Work	A5.7	Practicals based on e-Commerce

Semester-VI			
Old Subject		New Subject	
Code	Subject	Equivalence Code	Equivalence Subject
A6.1	Auditing Practices	A6.4(A)	Auditing Practices
A6.2	Mercantile Law	A6.2	Family Business Management
A6.3	Human Resource Management	A6.4(C)	Training & Development
A6.4	Marketing Management	A6.4(B)	e-Commerce and Digital Marketing
A6.5	International Finance	A6.5(A)	Investment Banking
A6.6	Practicals on Cases In Management	A6.6	Practicals on Employability Skills-II
A6.7	Project Report	A6.7	Project Report based on Elective Group



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Arts, Science & Commerce, College
Chopda (Jaigaon)



North Maharashtra University, Jalgaon

'A' Grade NAAC Re-Accredited (3rd Cycle)

Faculty of Commerce & Management

New Syllabus: B.B.A. 2019-20

Semester: VI

Paper: A6.7: Project Report based on elective

External Marks 60 + Internal Marks 40 = Maximum Total Marks: 100

Required Lectures: 60 hours

Objective:

1. To enhance analytical skills of students and to depict thorough knowledge of the domain subject and develop decision making abilities through study of various types of issues that need to be addressed, evaluating strategic alternatives and formulating remedial plans of action as recommendations.
2. To Increase the understanding of what managers should and should not do in guiding a business to success

PROJECT WORK:

1. Each student shall have to carry out the project work based on HR/Marketing/Finance as Elective Domain using Business/Management Research Methodology.
2. A project may be carried out at any outside organization or on a sub system of an organization.
3. The project work should be carried out individually. No group work is allowed in the Project work. The project title should not be repeated.
4. The topic of the project should be decided with the consultation & guidance of an internal guide-teacher of the institute/college. The project should be necessarily innovative and problem solving. No teacher shall be entrusted with more than 15 students for guidance and supervision.
5. The student should clearly mention the Need of Project, Research Methodology, Findings, Recommendation, Conclusion, etc.
6. The student has to write a report based on the actual work undertaken during the Summer vacations (after Semester-IV exams) for 5 weeks, based on the selected Elective Group at the specific selected enterprise/ organization or sub system and get it certified by the concerned teacher that the Project report has been satisfactorily



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PRINCIPAL
Arts, Science & Commerce College
Chopda (Jalgaon)

completed and submit TWO typed copies of the same to the Head / Director of the institute /Principal of the college.

7. One copy of the report submitted by the student shall be forwarded to the University by the Institute.
8. No student will be permitted to appear for Viva-Voce examinations, unless and until the project report is submitted within the stipulated time.



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Arts, Science & Commerce, College
Chopda (Dahgaon)



NORTH MAHARASHTRA UNIVERSITY, JALGAON

MASTER IN BUSINESS MANAGEMENT (Computer Management) Structure (w.e.f. June 2014)

Course Name: Master in Business Management (Computer Management)

Short Title of Degree: M.B.M. (Computer Management)

Faculty to which Assigned: Commerce and Management

Duration: 2 years full time

Pattern: semester

Examination Pattern: 60 (external) + 40 (internal)


Eligibility: Any Graduate

Medium of instruction: English

Objectives

- To prepare students for respectable career in the Software Design, Development & Testing. Also in Software Support, e-commerce, e-business, e-banking, e-services, e-governance etc. Or in business management domain where management is augmented by information communication technology.
- To develop inter-twining competence in the field of Commerce and Management, Computing Skill and Computational Tools.
- To develop students as Cyber Security experts, Information System Auditors.




PRINCIPAL
Arts, Science & Commerce College
Chopda (Jalgaon)

North Maharashtra University, Jalgaon

(NACC Re Accredited 'B' Grade University)

FACULTY OF COMMERCE & MANAGEMENT

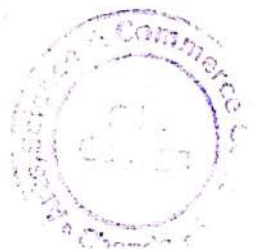
STRUCTURE OF MASTER IN BUSINESS MANAGEMENT (COMPUTER MANAGEMENT)

ACADEMIC YEAR: 2014-15

MBM (COMPUTER MANAGEMENT)

Semester-I and II (w.e.f- 2014-15)			
Paper	Semester-I	Paper	Semester-II
1.1	ICT Fundamentals & Operating Systems	2.1	Object Oriented Programming using C++
1.2	Web Designing & Web Tools	2.2	RDBMS with MS-SQL Server
1.3	Programming concepts using C++	2.3	Graphics & Animation
1.4	Financial Accounting for Manager (Tally ERP)	2.4	Software Engineering & Project Management
1.5	Office Automation	2.5	Management Information System & ERP
1.6	Lab - I (Based on 1.1 & 1.2)	2.6	Lab – III (Based on 2.1 & 2.2)
1.7	Lab – II (Based on 1.3 & 1.4)	2.7	Lab – IV (Based on 2.3 & 2.4)

Semester-III and IV (w.e.f- July 2015-16)			
Paper	Semester-III	Paper	Semester-IV
3.1	Database Administration with Oracle & D2K	4.1	ASP.NET
3.2	VB.Net	4.2	Scripting languages (PHP)
3.3	Business Management	4.3	Java Programming Language
3.4	E-Commerce and Website Management	4.4	Organizational Behavior & HRM
3.5	ICT Applications in Business	4.5	Lab - VII (Based on 4.1 & 4.2)
3.6	Lab - V (Based on 3.1 & 3.2)	4.6	Lab – VIII (Based on 4.3 & 4.4)
3.7	Lab – VI (Based on 3.3 & 3.4)	4.7	Project Work




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Semester-I and II (w.e.f.-July 2014-15)

Paper	Semester-I	Maximum Marks			Paper	Semester-II	Maximum Marks		
		Int	Ext.	Total			Int	Ext.	Total
1.1	ICT Fundamentals & Operating Systems	40	60	100	2.1	Object Oriented Programming using C++	40	60	100
1.2	Web Designing & Web Tools	40	60	100	2.2	RDBMS with MS-SQL Server	40	60	100
1.3	Programming concepts using C++	40	60	100	2.3	Graphics & Animation	40	60	100
1.4	Financial Accounting for Manager (Tally ERP)	40	60	100	2.4	Software Engineering & Project Management	40	60	100
1.5	Office Automation	40	60	100	2.5	Management Information System & ERP	40	60	100
1.6	Lab - I (Based on 1.1 & 1.2)	40	60	100	2.6	Lab - III (Based on 2.1 & 2.2)	40	60	100
1.7	Lab - II (Based on 1.3 & 1.4)	40	60	100	2.7	Lab - IV (Based on 2.3 & 2.4)	40	60	100
Total		280	420	700	Total		280	420	700

Semester-III and IV (w.e.f.-July 2015-16)

Paper	Semester-III	Maximum Marks			Paper	Semester-IV	Maximum Marks		
		Int	Ext.	Total			Int	Ext.	Total
3.1	Database Administration with Oracle & D2K	40	60	100	4.1	ASP.NET	40	60	100
3.2	VB.Net	40	60	100	4.2	Scripting languages(PHP)	40	60	100
3.3	Business Management	40	60	100	4.3	Java Programming Language	40	60	100
3.4	E-Commerce and Website Management	40	60	100	4.4	Organizational Behavior & HRM	40	60	100
3.5	ICT Applications in Business	40	60	100	4.5	Lab - VII (Based on 4.1 & 4.2)	40	60	100
3.6	Lab - V (Based on 3.1 & 3.2)	40	60	100	4.6	Lab - VIII (Based on 4.3 & 4.4)	40	60	100
3.7	Lab - VI (Based on 3.3 & 3.4)	40	60	100	4.7	Project Work	40	60	100
Total		280	420	700	Total		280	420	700



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North Maharashtra University, Jalgaon

(NACC Accredited 'A' Grade University)

FACULTY OF COMMERCE & MANAGEMENT

M.B.M. (C.M.) Semester IV

4.7 Project Work

60 + 40 Pattern: External Marks 60 + Internal Marks 40=Maximum Total Marks: 100

Group Project is not allowed.

Use of CASE tool is expected. Use of testing tools is desirable.

Students have to submit Project Report in hard copies as well as in pdf format to the college & college should submit it to university.

Project Marking Scheme for MBM (Computer Management)

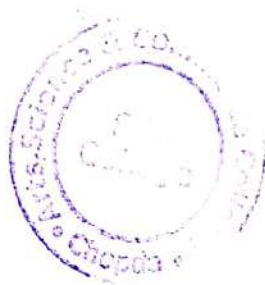
Marks are Out of 100 (Convert to out of 40 for internal and to out of 60 for external)

Criterion	Performance		Total marks	Marks given
Quantum of Work	Not enough for Project	0	10	
	Just right	3		
	Good amount of work done	6		
	Very-good amount of work	10		
Understanding of project/task objectives	No understanding of project/task objectives	0	10	
	Fair amount of understanding	3		
	Clear understanding of various aspects	6		
	Detailed understanding of the all aspects of the project	10		
Approach adopted	Technically inept, with no motivation to improve	0	10	
	Reasonable level of skills demonstrated	3		
	Technical competence demonstrated	6		
	Outstanding demonstration of technical skills, creative approach	10		
Effort	No evidence of interest in the work	0	10	
	Reasonably good effort	3		



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	Conscientious effort	6		
	Excellent amount of effort	10		
Initiative and self-motivation	No Evidence	0	10	
	Evidence of some contribution of ideas	3		
	Significant contribution towards developing/refining/doing the task allocated	6		
	Sufficient evidence of handling the tasks independently and efficiently	10		
Achievement of objectives	Not much progress	0	10	
	Adequate but not enough	3		
	Good progress and made best use of the opportunities present	6		
	Outstanding performance	10		
Report Content	Not Submitted	0	10	
	Mostly sound but a lot of scope of improvement	3		
	A very well structured report	6		
	Comprehensive and detailed report	10		
Presentation	Not presented	0	15	
	Okay, but not an overall understanding of what constitutes a presentation	5		
	Well presented	10		
	Very well presented, with clear understanding of goals	15		
Q & A	Not participated	0	15	
	Could handle but confused	5		
	Could handle competently	10		
	Could handle professionally	15		




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North Maharashtra University, Jalgaon

Syllabus for M.Sc. (Computer Science)- 2017

SEM – I

CS-101	Advanced C++ Programming
CS-102	Automata Theory and Computability
CS-103	Advanced Operating System
CS-104	Digital Image Processing
CS-105- LAB - I	Lab on Advanced OS and Digital Image Processing
CS -106-LAB - II	Lab on Advanced C++ Programming

SEM – II

CS-201	Advanced DBMS
CS-202	Machine Intelligence
CS-203	Compiler Construction
CS-204	Design and Analysis of Algorithms
CS-205- LAB - III	Lab on DAA and MI
CS -206-LAB - IV	Lab on Advanced DBMS

SEM –III

CS-301	Software Engineering
CS-302	Optimization of Algorithm
CS-303	Advanced Java Programming
CS-304	Windows, WCF and WPF Programming
CS-305-LAB – V	Lab on Windows, WCF and WPF Programming
CS -306-LAB –VI	Lab on Advanced Java Programming

SEM – IV

CS-401	Natural Language Processing
CS-402	Advanced Network Programming
CS-403	Data Warehousing and Data Mining
CS-404- LAB – VII	Lab on Network programming and Data Mining
CS -405	Mini Project (200 marks)