



SAVITRIBAI PHULE PUNE UNIVERSITY

Revised Syllabus of Master of Commerce (M.Com.) Semester Pattern with Credit System with effect from June 2019

The M. Com. Syllabus for regular students is being revised from the academic year 2019-20.
The course structure is as below:-

1. Objectives :

- To equip and train Post Graduate students to accept the challenges of business world by providing opportunities for study and analysis of advanced commercial and business methods and processes.
- To develop independent logical thinking and facilitate personality development.
- To equip the students to seek suitable careers in management and entrepreneurship.
- To acquaint students with significance of research in business.
- To impart skills regarding methods of data collection and their interpretations.
- To develop communication and analytical skills among students.

2. Duration :

The M.Com. Course will be of Two Years duration consisting of two part. I.e. Part I and Part II. Each part is having Two Semesters.

Thus, the M.Com. Course is of Four Semesters. For each Semester, there will be Four Papers of 100 marks each. M.Com. Degree will be of 1600 marks in aggregate.

3. Duration and Structure of Programme:

The M.Com (Semester pattern with Credit System) degree Programme shall be of 2 years' duration divided into two parts, Part I and Part II, and 4 semesters.

4. Eligibility :

The student who has passed any Bachelors degree of this University or any other recognized University shall be held eligible to be admitted to M.Com. Course.

5. Course Structure:

The M.Com. degree course will be of two year duration consisting of four semesters and of minimum 64 credits as below:

Sr. No.	Semester	Total Credits
1	Semester I	16
2	Semester II	16
3	Semester III	16
4	Semester IV	16
	Grand Total	64



Credit Scheme

Semester	Core Course			Elective Course			Special Credit			Total Credits
	No.of Papers	Credits	Total Credits	No.of Papers	Credits	Total Credits	No.of Papers	Credits	Total Credits	
I	6	4	24	-	-	-	-	-	-	24
II	6	4	24	-	-	-	1	1	2	26
III	3	4	12	3	4	12	-	-	-	24
IV	3	4	12	3	4	12	1	1	2	26
										100

- For each core and elective course, there will be 4 lectures hours of teaching per week.
- Course will also include presentations, Quizzes, Role-Plays and Case-Study.
- Every paper will carry 100 marks which will consists of continuous and comprehensive evaluation (internal evaluation) of 50 marks followed by Final End Semester Exam of 50 marks each
- Special credits the Total marks will be out of 50.
- The instruction of the Paper will be in English.
- Exams will be conducted according to the University rules
- Attendance of 75% is compulsory as per University rules.

Semester 4

Subject Code	Title of the Subject	Core / Electives	Credits
DC 4.1	Legal Environment of Business	Core	4
DC 4.2	Business Skills for Excellence	Core	4
DC 4.3	International Business	Core	4
Electives / Specialization			
I) Corporate Accounting and Financial Management (CA)			
Subject Code	Title of the Subject		
DC (CA) 4.4	New Trends in Accounting	Elective	4
DC (CA) 4.5	International Financial Reporting Standards	Elective	4
DC (CA) 4.6	Financial Risk Management/Project	Elective	4
II) Banking and Finance (BF)			
DC (BF) 4.4	E-Banking and Financial Services	Elective	4
DC (BF) 4.5	Micro Finance	Elective	4
DC (BF) 4.6	International Banking/Project	Elective	4
III) Digital Marketing & E-Commerce (DM)			
DC (DM) 4.4	E-Banking and Financial Services	Elective	4
DC (DM) 4.5	Digital Marketing	Elective	4
DC (DM) 4.6	Internet and Web Designing/Project	Elective	4
IV) Business Processes (BP)			
DC (BP) 4.4	Marketing Research	Elective	4
DC (BP) 4.5	Customer Relationship Management	Elective	4
DC (BP) 4.6	Rural Business Operations/Project	Elective	4
Total Credits			24

Semester IV

Semester	Subject Type	Course Code	Title of the Paper	Hrs/Week	Credit	Exam. Hours	Maximum Marks			
Semester IV	Core Compulsory	401	Capital Market and Financial Services	04	04	03	40	60	100	
		402	Industrial Economic Environment (OR) Operations Research	04	04	03	40	60	100	
		<i>To choose any one Group of the following</i>								
		Group A (Advanced Accounting & Taxation)								
		403	Recent Advances in Accounting, Taxation, Taxation and Auditing	04	04	03	40	60	100	
		404	Project Work/ Case Studies	04	04	03	40	60	100	
		Group B (Commercial Laws & Practices)								
		405	Recent Advances in Commercial Laws and Practices	04	04	03	40	60	100	
		406	Project Work/Case Studies	04	04	03	40	60	100	
		Group C (Advanced Cost Accounting & Cost system)								
		407	Recent Advances in Cost Auditing and Cost System	04	04	03	40	60	100	
		408	Project Work/Case Studies	04	04	03	40	60	100	
		Group D (Co-operation & Rural Development)								
		409	Recent Advances in Co-operative and Rural Development	04	04	03	40	60	100	
		410	Project Work/Case Studies	04	04	03	40	60	100	
		Group E (Business Practices & Environment)								
		411	Recent Advances in Business Practices and Environment	04	04	03	40	60	100	
		412	Project Work/Case Studies	04	04	03	40	60	100	
		Group F (Business Administration)								
		413	Recent Advances in Business Administration	04	04	03	40	60	100	
	414	Project Work/Case Studies	04	04	03	40	60	100		
	Group G (Advanced Banking & Finance)									
	415	Recent Advances in Banking and Finance	04	04	03	40	60	100		
	416	Project Work/Case Studies	04	04	03	40	60	100		
	Group H (Advanced Marketing)									
	417	Recent Advances in Marketing	04	04	03	40	60	100		
	418	Project Work/Case Studies	04	04	03	40	60	100		





Savitribai Phule Pune University

(Formerly University of Pune)

Two Year Degree Program in Biotechnology

(Faculty of Science & Technology)

Revised Syllabi for

M.Sc. (Biotechnology) Part-I

(For Colleges Affiliated to Savitribai Phule Pune University)

Choice Based Credit System Syllabus

To be implemented from Academic Year 2019-2020



Title of the course: M.Sc. (Biotechnology)

Preamble:

Biotechnology has grown, extensively in last couple of decades. This advanced 'interdisciplinary' life science branch encompasses areas viz. molecular biology, genetics, biochemistry, microbiology, immunology, virology, plant and animal tissue culture, chemistry and engineering. It is a fast emerging "cutting edge" science with distinctive advantages as it finds applications in practically all aspects of life. The subject offers exciting opportunities in various fields from basic research to industry oriented career. Global and local focus has slowly shifted to using knowledge of life Science for innovative technology development that is being used for betterment of human life. Many fundamental research fields from cell biology to molecular biology, from biochemistry to biophysics, from genetic engineering to stem cell research, from bioinformatics to genomics-proteomics, from environmental biology and to biodiversity, from microbiology to bioprocess engineering, from bioremediation to *Insilco* drug discovery etc. comes under the umbrella of Biotechnology.

The proposed choice based credit curriculum and grading system will cater to the existing interdisciplinary nature of biotechnology can also offer many courses to the other branches of life science. The generative power of biological data is effectively harnessed by biotechnology like no other field. Economic and social renaissance is staged on biotechnology especially, since it's biomedical and cutting edge technological applications are tremendously powerful in shaping this century and exciting biofuture. Keeping in view the expanse and applications of Biotechnology in every field, there is going to be a perpetual demand for resource personnel with Biotechnology specialization. The post graduate program is aimed to cater to this ever increasing demand and to groom the students to excel in their future career. Education and research sectors require such interdisciplinary trained workforce to develop future generations of science leaders.

Introduction:

Master's in Biotechnology course syllabus is revised to cater to the needs of credit based semester and grading system. The changing scenario of higher education in India and abroad is taken into consideration while restructuring this syllabus and more oriented towards current need of modern research and industrial sectors. The syllabus encompasses the fundamental academics at one end and latest technologies in life science at the other. Theory courses will help students develop their knowledge sets on various topics of biotechnology, to which, they are introduced at the undergraduate

level. Extensive practical courses are designed to supplement the theory courses with hands on experimentation in wet-lab and on fields. Empowerment of students to face research and industrial outlets is at the centre of this syllabus. Students having to select their own courses will develop the depth in specialization and also make them ready to face the upcoming scientific advances in the world without any further training. M.Sc. syllabus has been prepared keeping in vision the undergraduate curriculum. At the undergraduate level, students were introduced to many fundamental topics in life sciences such as molecular biology, developmental biology, fermentation technology, biodiversity, bioinformatics and tissue culture etc. At the post graduate level they will be also be acquainted with the thrust/new areas of biotechnology like bioinformatics, clinical research, data base management, IPR, Food Technology etc. to give the students the advantage of not only learning these subjects but also give them the edge over others in their employability. A research project/ industrial training modules are incorporated to provide a buffer zone for budding biotechnologists eager to enter the life science sector.

Objectives to be achieved:

- To help the students to build interdisciplinary approach
- To empower students to excel in various research fields of Life Sciences
- To inculcate sense of scientific responsibilities for social and environment awareness.
- To acquaint the students with thrust areas of biotechnology
- To adapt the internationally acknowledged Choice Based Credit System (CBCS) that offers opportunities to learn core subjects and to explore additional avenues of learning beyond the core subjects for complete development of an individual.

Course Structure:**Semester I**

Course code	Course Title	Credits
Core Compulsory Theory Papers (CCTP)		
MBT- 101	Advanced Biological Chemistry	4
MBT- 102	Cell & Molecular Biology	4
MBT- 103	Genetics & Immunology	4
Core Compulsory Practical Paper: CCPP-1		
MBT- 104	Laboratory Course I - Advanced Biological Chemistry, Cell & Molecular Biology, Immunology	4
Choice Based Optional Papers: CBOP (any One)		
MBT -105	Environmental Biotechnology	4 (2T + 2P)
MBT -106	Food Biotechnology	4 (T)
Total		20 Credits

Semester II

CourseCode	Course Title	Credits
Core Compulsory Theory Papers (CCTP)		
MBT- 201	Genetic Engineering	4 Credits
MBT- 202	Bacteriology and Virology	4 Credits
MBT- 203	Plant Biotechnology	4 Credits
Core Compulsory Practical Paper : CCPP-1		
MBT- 204	Laboratory Course II - Genetic Engineering, Bacteriology and Virology, Plant Biotechnology	4 Credits
Choice Based Optional Papers: CBOP (any One)		
MBT -205	Clinical Research, Data Base management, & IPR	4 Credits
MBT -206	Medical Biotechnology	4 Credits
Total		20 Credits

Semester III

Course code	Course Title	Credits
Core Compulsory Theory Papers (CTTP)		
MBT- 301	Animal & Stem Cell technology	4 Credits
MBT- 302	Bioprocess engineering	4 Credits
MBT- 303	Bioinformatics & Biostatistics	4 Credits
Core Compulsory Practical Course : CCTP-1		
MBT - 304	Laboratory Course IV- Animal Biotechnology, Bioprocess engineering & Bioinformatics & Biostatistics	4 Credits
Choice Based Optional Papers: CBOP (any One)		
MBT - 305	Nano Biotechnology	4Credits (2T + 2P)
MBT - 306	Agricultural Biotechnology	4 Credits (2T + 2P)
Total		20 Credits

Semester IV

Course code	Course Title	Credits
Core Compulsory Theory Papers (CTTP)		
MBT- 401	Genomics and Proteomics	4 Credits
MBT- 402	Advanced Bio analytical Techniques	4 Credits
Core Compulsory Practical Paper : CCTP-1		
MBT- 403	Research Project	4 Credits
Choice Based Optional Papers: CBOP (any Two)		
MBT - 404	Bio entrepreneurship & Start up Designing	4Credits
MBT - 405	Pharmaceutical Biotechnology & Drug Designing	4 Credits
MBT - 406	Research Methodology & Scientific Communication	4 Credits
MBT - 407	Quality Control, Bio safety & Bioethics	4 Credits
Total		20 Credits



Savitribai Phule Pune University

(Formerly University of Pune)

Two Year Degree Program in Computer Science

(Faculty of Science & Technology)

Revised Syllabi for

M.Sc. (Computer Science) Part-I

(For Colleges Affiliated to Savitribai Phule Pune University)

Choice Based Credit System Syllabus

To be implemented from Academic Year 2019-2020

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Title of the Course: M.Sc. (Computer Science)**Preamble:**

This syllabus is the extension of the existing syllabus which is currently being taught to M.Sc. (Computer Science) of Savitribai Phule Pune University for the last few years, but modified to be placed within the credit based system to be implemented from the academic year 2019-2020. However, there are few changes incorporated in the existing syllabus. It is believed that the proposed changes as part of the credit based system will bring a qualitative change in the way M.Sc. (Computer Science) is taught, which will offer a more enriched learning experience. It aims to provide technology-oriented students with the knowledge and ability to develop creative solutions, and better understand the effects of future developments of computer systems and technology on people and society. The syllabus is about developing skills to learn new technology, grasping the concepts and issues behind its use and the use of computers.

Course Structure:

Year/ Sem	Course Type	Course Code	Course Name	Credit	% of Assessment		
					IA	UE	Total
I Year Sem-I	Core Compulsory Theory Paper	CSUT111	Paradigm of Programming Language	4	30	70	100
		CSUT112	Design and Analysis of Algorithms	4	30	70	100
		CSUT113	Database Technologies	4	30	70	100
	Choice Based Optional Paper	CSDT114A	Cloud computing	2	15	35	50
		CSDP114A	Cloud Computing Practical	2	15	35	50
		OR					
		CSDT114B	Artificial Intelligence	2	15	35	50
		CSDP114B	Artificial Intelligence Practical	2	15	35	50
		OR					
		CSDT114C	Web Services	2	15	35	50
		CSDP114C	Web Services Practical	2	15	35	50
		OR					
Core Compulsory Practical Paper	CSUP115	PPL and Database Technologies Practical	4	30	70	100	

Year/ Sem	Course Type	Course Code	Course Name	Credit	% of Assessment		
					IA	UE	Total
I Year Sem-II	Core Compulsory Theory Paper	CSUT121	Advanced Operating System	4	30	70	100
		CSUT122	Mobile Technologies	4	30	70	100
		CSUT123	Software Project Management	4	30	70	100
	Choice Based Optional Paper	CSDT124A	Project	2	15	35	50
		CSDP124A	Project related Assignments	2	15	35	50
		OR					
		CSDT124B	Human Computer Interaction	2	15	35	50
		CSDP124B	Human Computer Interaction Practical	2	15	35	50
		OR					
		CSDT124C	Soft Computing	2	15	35	50
		CSDP124C	Soft Computing Practical	2	15	35	50
		OR					
Core Compulsory Practical Paper	CSUP125	Practical on Advanced OS & Mobile Technologies	4	30	70	100	



Year/ Sem	Course Type	Course Code	Course Name	Credit	% of Assessment		
					IA	UE	Total
II Year Sem-III	Core Compulsory Theory Paper	CSUT231	Software Architecture and Design Pattern	4	30	70	100
		CSUT232	Machine Learning	4	30	70	100
		CSUT233	Evolutionary Algorithms	4	30	70	100
	Choice Based Optional Paper	CSDT234A	Big Data	2	15	35	50
		CSDP234A	Big Data Practical	2	15	35	50
		OR					
		CSDT234B	Web Analytics	2	15	35	50
		CSDP234B	Web Analytics Practical	2	15	35	50
		OR					
		CSDT234C	Project	2	15	35	50
		CSDP234C	Project related Assignments	2	15	35	50
Core Compulsory Practical Paper	CSUP235	Practical on Software Architecture and Design Pattern and Machine Learning	4	30	70	100	

Year/ Sem	Subject	Paper	Title of Paper	Credit	% of Assessment		
					IA	UE	Total
II Year Sem-IV	Core	CSUIT241	Industrial Training /Institutional project	20			

IA :- Internal Assessment, UE :- University Examination



SPPU, Pune
Revised Syllabi (2019 pattern) for three years B.Com. T.Y. B.Com.

Degree Course CBCS

Semester VI

Subject Name :- **Cost and Works Accounting, Special Paper II**

Course Code :- 365 – E

Subject Title :- Methods of Costing

Objectives:

1. To provide knowledge about the various methods of costing.
2. To understand the applications of different methods of costing in manufacturing and service industries.
3. To enable students to prepare cost statements under different types of manufacturing industries and Service Industries
4. To build the applicability of cost accounting standards in the method of costing.

Unit No.	Unit Title	Contents	Skills to be developed
1	Methods of Costing	1.1. Introduction to Methods of Costing. 1.2 Job Costing Meaning, Features, Advantages and Limitations (Simple problems Only) 1.3 Introduction of Batch costing- (theory Only)	a. Lerner will understand the various methods of costing b. Develop the ability to prepare a job cost sheet





Savitribai Phule Pune University

(Formerly University of Pune)

Three Year B.Sc. Degree Program in Biotechnology

(Faculty of Science & Technology)

F.Y. B. Sc. (Biotechnology)

Choice Based Credit System Syllabus

To be implemented from Academic Year 2019-2020



Preamble of the Syllabus:

Biotechnology has expanded and established as an advanced interdisciplinary applied science. The study of Life itself is at the core of it and the interdisciplinary networking potential of biotechnology has given it a separate status in fundamental research as well as in modern industrial enterprise. Global and local focus has slowly shifted to not only current "Century of Knowledge" but also on to technology development and application in life sciences. In the milieu of research and industrialization for economic development and social change, biotechnology is an ideal platform to work.

The interdisciplinary nature of biotechnology integrates living systems including animal, plant and microbes and their studies from molecular biology to cell biology, from biochemistry to biophysics, from genetic engineering to stem cell research, from bioinformatics to genomics-proteomics, from environmental biology to biodiversity, from microbiology to bioprocess engineering, from bioremediation to material transformation and so on. The relevance and application of these studies on living organisms and their bioprocesses is extensively covered in this field with the help of technology. Green revolution and white revolution was possible in India thanks to the deeper and intrinsic understanding of biotechnology.

Economic and social renaissance is staged on biotechnology especially, since it's biomedical and cutting edge technological applications are tremendously powerful in shaping this century and exciting future. Biotechnologists are always in demand as an efficient work force in fundamental research and industries. Education and research sectors require such interdisciplinary trained work force to develop future generations of science leaders. Career opportunities for graduate students are created and expanding at the biotechnology parks and in manufacturing industries, teaching, research institutes and IT industry.

The restructures syllabus is a choice based credit system with semester pattern. Biotechnology has grown extensively in last couple of decades. The syllabi till today had been sufficient to cater to the needs of students for building up their careers in industry and research. However, with the changing scenario at local and global level, we feel that the syllabus orientation should be altered to keep pace with developments in the education and industrial sector.

The need of the hour is to design appropriate syllabi that emphasize on teaching of technological as well as the economical aspects of modern biology. The proposed credit based curriculum ensures the requirement of academia and industry. Theory supplemented with extensive practical skill

sets will help a graduate student to avail the opportunities in the applied fields (research, industry or institutions) without any additional training. Thus, the university/college itself will be developing the trained and skilled man-power. Biotechnology being an interdisciplinary subject, this restructured syllabus will combine the principles of physical, chemical and biological sciences along with developing advanced technology.

Biotechnology curricula are operated at two levels viz. undergraduate and postgraduate. The undergraduate curricula are prepared to impart primarily basic knowledge of the respective subject from all possible angles while postgraduate syllabus emphasizes on more applied courses. In addition, students are to be trained to apply this knowledge particularly in day-to-day applications of biotechnology and to get a glimpse of research.

The basic aim of the revised course curriculum is to integrate various disciplines of life sciences which will cater the needs of human resources in academia and industry. The Overall objective of the Program is to promote education and research in biotechnology and provide academic and professional excellence for immediate productivity in academics, government organization, biomedical sectors, health and nutrition settings for ultimate benefit of society and sustainable development.

The objectives of the course curriculum are:

- To introduce the concepts in various allied subjects
- To enrich students' knowledge in basic and applied aspects of life sciences.
- To help the students to build interdisciplinary approach in teaching/ learning & in research.
- To inculcate the sense of scientific responsibilities and social awareness
- To help students build-up a progressive and successful career in academia and industry.

The present course curriculum will generate skilled human resource required in academia and Industry. In general, as a result of this program, the student will be able to achieve basic and advance knowledge based proficiency in applied subjects of life sciences, create and develop students with interdisciplinary mind set for learning science, improve problem solving aptitude using scientific methods in biotechnology and allied subjects, will adopt scientific approach for implications of biotechnology in society, environment and education, will demonstrate knowledge and learn various biological processes at cellular and molecular level and get expertise in the different techniques used in the fields of Biotechnology.



Semester VI

Course code	Course Title	Credits	Number of Lectures	Marks
BBt-601	Enzyme and Enzyme Technology	2 Credits	30	50 (35 External +15 Internal)
BBt-602	Agriculture Biotechnology	2 Credits	30	50 (35 External +15 Internal)
BBt-603	Applied Biotechnology II	2 Credits	30	50 (35 External +15 Internal)
BBt-604	Food and Pharmaceutical Biotechnology	2 Credits	30	50 (35 External +15 Internal)
BBt-605	Bioinformatics	2 Credits	30	50 (35 External +15 Internal)
BBt-606	Bio safety and Bioethics and IPR	2 Credits	30	50 (35 External +15 Internal)
BBt-607 & 608	SEC – III & SEC – IV : Project	4 Credit	60	100 (70 External +30 Internal)

PRACTICAL

BBt-609	Practical in Enzyme Technology	2 Credits	15 P	50 (35 External +15 Internal)
BBt-610	Practical in Agriculture Biotechnology and Bioinformatics	2 Credits	15 P	50 (35 External +15 Internal)
BBt-611	Practical in Food and Pharmaceutical Biotechnology	2 Credits	15 P	50 (35 External +15 Internal)
Total Credit (Theory + Practical)		22 Credit		

