Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon



Structure of Syllabus for B. Sc.

T. Y. B. Sc.(Subject name)

Choice Based Credit System (CBCS)

2020-2021

T. Y. B. Sc. Subject Name (CBCS Structure) Semester V and VI Preamble

Introduction

Scheme for B.Sc. Program (Faculty of Science and Technology)

			First	t Year			Secon	d Year			Third Yea	nr		
		Seme			ster II	Seme	ster III		ster IV	Sei	mester V		ester VI	Total Credit value
1	Core courses	Credits each	Courses	Credits each	Courses	Credits each	Courses	Credits each	Courses	Credits each	Courses	Credits each	Courses	
	(i)Theory	4	4	4	4	4	3	4	3					4X14=56
	(ii)Practical	2	4	2	4	2	3	2	3					2X14=28
2	Ability enhancement compulsory course (AECC)(2)	2	1	2	1	2	1	2	1					2 X4 = 08
3	Skill Enhancement Course (SEC) (4)					2	1	2	1					2X 2 = 04
4	Discipline Specific CoreDSC													
	(i)Core I to IV									3	4	3	4	3X8=24
	(ii)Core (Practical)									2	3	2	3	2X6=12
5	Skill Enhancement Course (SEC): Skill Based course									3	1	3	1	3 X 2 = 06
6	Elective Course (any one)									3	1	3	1	3 X 2 = 06
7	Elective Audit Course (out of 3)									None Credit	Any one	None Credit	Any one	
	Total Credit value (Credit x No .of Courses)		26	2	26		22	2	22		24		24	144

Learning Objectives

Structure of curriculum of T. Y. B. Sc. (Subject Name)

Semester V

Disciplin e	Course Type	Course Code	Course title	Credits	Hours/week (Clock hours)	Total Teaching hours	Mark (Tota 100)	ıl
							CA	UA
DSC	Core I	XY-501		3	3	45	40	60
	Core II	XY-502		3	3	45	40	60
	Core III	XY-503		3	3	45	40	60
	Core IV	XY-504		3	3	45	40	60
DSC Skill Enhanc ement Course (SEC)	Skill Based	XY-505		3	3	45	40	60
DSC Elective course	Elective Course (Any one)	XY-506 (A) XY-506 (B)		3	3	45	40	60
DSC	Core (Practical)	XÝ-507		2	4 (per batch)	60	40	60
		XY-508		2	4 (per batch)	60	40	60
		XY-509		2	4 (per batch)	60	40	60
Non Credit	Elective audit	AC-501 : A	NSS	No credit	2	30	100	
Audit Course	course (Any one)	AC-501 : B	NCC					
		AC-501 : C	Sports					

Semester VI

Disciplin e	Course Type	Course Code	Course title	Credits	Hours/week (Clock hours)	Total Teaching hours	Mark (Tota 100)	
							CA	UA
DSC	Core I	XY-601		3	3	45	40	60
	Core II	XY-602		3	3	45	40	60
	Core III	XY-603		3	3	45	40	60
	Core IV	XY-604		3	3	45	40	60
DSC Skill Enhanc ement Course (SEC)	Skill Based	XY-605		3	3	45	40	60
DSC Elective Course	Elective Course (Any one)	XY-606 (A) XY-606 (B)		3	3	45	40	60
DSC	Core (Practical)	XY-607		2	4 (per batch)	60	40	60
		XY-608		2	4 (per batch)	60	40	60
		XY-609		2	4 (per batch)	60	40	60

Non	Elective	AC-601:	Soft skill	No	2	30	100	
Credit	audit	Α		credit				
Audit Course	course (Any one)	AC-601 : B	Yoga					
		AC-601 :	Practicing Cleanliness					

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

Program specific objectives (PSO)
Program outcome (PO)
Course outcome (CO)
Course Structure: Eligibility:
Course fee: Duration: The duration of B.Sc. degree program shall consists of three years. Medium of instruction: The medium of instruction for the courses shall be English. Credit to contact hour:
Attendance:
Examination pattern
• Each theory and practical course will be of 100 marks comprising of 40 marks internal and 60 marks external examination.
• Theory examination (60 marks) will be of three hours duration for each theory course. There shall be 5 questions each carrying equal marks (12 marks each). The pattern of question papers shall be:
Internal examination (40 marks)
Practical examination

Equivalence of the courses for T. Y. B. Sc. (Subject Name)

Old Syllabus	(June	2016)	(Semester	pattern	New Syllabus	(June	2019)	CBCS	pattern	(Semester	pattern
60:40)				_	60:40)						
Course code	Paper				Course code	Paper					
Semester V											
Semester VI											

Distribution of Course papers for T. Y.B. Sc. (Subject Name) Semester: V

Disciplin e	Course Type	Course Code	Course title	Credits	Hours/week (Clock hours)	Total Teaching hours	Mark (Tota	s I 100)
							CA	UA
DSC	Core I	XY-501		3	3	45	40	60
	Core II	XY-502		3	3	45	40	60
	Core III	XY-503		3	3	45	40	60
	Core IV	XY-504		3	3	45	40	60
DSC Skill Enhanc ement Course (SEC)	Skill Based	XY-505		3	3	45	40	60
DSC Elective course	Elective Course (Any one)	XY-506 (A) XY-506 (B)		3	3	45	40	60
DSC	Core (Practical)	XÝ-507		2	4 (per batch)	60	40	60
		XY-508		2	4 (per batch)	60	40	60
		XY-509		2	4 (per batch)	60	40	60
Non Credit	Elective audit	AC-501 :	NSS	No credit	2	30	100	
Audit Course	course (Any one)	AC-501 : B	NCC					
		AC-501 : C	Sports					

	DSC Core Courses	
	XY - 501: Course Title	
Total Hours: 45		Credits: 3
Unit	Topics	Lectures
	Course objective	
	Learning outcomes After successful completion of this course, students are expected to: •	
UNIT-1		
Suggested Readings	1. Lehninger, A I. (2013) Principles of Biochemistry, 6 th edn., Nelson, D L and Cox, M. M. (eds.) WH Freeman and Co., New York.	

2.	Moat, A. and Foster, J. (2002) Microbial Physiology, 4 th edn., Wiley
	Interscience Publications, New York.
3.	Gottschalk, G. (1986) Bacterial Metabolism, 2 nd edn., Springer-
	Verlag

	XY - 502: Course Title	
Total Hours: 45		Credits: 3
Unit	Topics	Lectures
	Course objective •	
	Learning outcomes After successful completion of this course, students are expected to: •	
UNIT-1		
Suggested Readings	 Lehninger, A I. (2013) Principles of Biochemistry, 6thedn., Nelson, D L and Cox, M. M. (eds.) WH Freeman and Co., New York. Moat, A. and Foster, J. (2002) Microbial Physiology, 4thedn., Wiley Interscience Publications, New York. Gottschalk, G. (1986) Bacterial Metabolism, 2ndedn., Springer-Verlag 	

	XY - 503: Course Title							
Total Hours: 45		Credits: 3						
Unit	Topics	Lectures						
	Course objectives							
	•							
	Learning outcomes After successful completion of this course, students are expected to:							
UNIT-1								

Suggested Readings	 Lehninger, A I. (2013) Principles of Biochemistry, 6thedn., Nelson, D L and Cox, M. M. (eds.) WH Freeman and Co., New York. Moat, A. and Foster, J. (2002) Microbial Physiology, 4thedn., Wiley Interscience Publications, New York. Gottschalk, G. (1986) Bacterial Metabolism, 2ndedn., Springer-Verlag 	

	XY - 504: Course Title	
Total Hours: 45		Credits: 3
Unit	Topics	Lectures
	Course objectives •	
	Learning outcomes After successful completion of this course, students are expected to: •	
UNIT-1		
Suggested	1. Lehninger, A I. (2013) Principles of Biochemistry, 6 th edn., Nelson,	
Readings	D L and Cox, M. M. (eds.) WH Freeman and Co., New York.	
	2. Moat, A. and Foster, J. (2002) Microbial Physiology, 4 th edn., Wiley	
	Interscience Publications, New York. 3. Gottschalk, G. (1986) Bacterial Metabolism, 2 nd edn., Springer-	
	Verlag	
	4.	

DSC Skill Enhancement Course (SEC)SEC-III: Skill Based			
	XY - 505: Course Title		
Total Hours: 45		Credits: 3	

Unit	Topics	Lectures
	Course objectives	
	•	
	Learning outcomes	
	After successful completion of this course, students are expected to:	
	•	
UNIT-1		
Suggested	1. Lehninger, A I. (2013) Principles of Biochemistry, 6 th edn., Nelson,	
Readings	D L and Cox, M. M. (eds.) WH Freeman and Co., New York.	
	2. Moat, A. and Foster, J. (2002) Microbial Physiology, 4 th edn., Wiley	
	Interscience Publications, New York.	
	3. Gottschalk, G. (1986) Bacterial Metabolism, 2 nd edn., Springer-	
	Verlag 4.	
	4.	

	DSC Elective Course (Any one) XY – 506 (A): Course Title			
Total Hours: 45		Credits: 3		
Unit	Topics	Lectures		
	Course objectives •			
	Learning outcomes After successful completion of this course, students are expected to: •			
UNIT-1				
Suggested Readings	1. Lehninger, A I. (2013) Principles of Biochemistry, 6 th edn., Nelson, D L and Cox, M. M. (eds.) WH Freeman and Co., New York.			
	2. Moat, A. and Foster, J. (2002) Microbial Physiology, 4 th edn., Wiley			

	Interscience	Pub	olication	s, New Yo	rk.		
3.	Gottschalk,	G.	(1986)	Bacterial	Metabolism,	2 nd edn.,	Springer-
	Verlag						

Total Hours: 45 Unit Course objectives Course objectives Learning outcomes After successful completion of this course, students are expected to: UNIT-1 UNIT-1 Longing outcomes After successful completion of this course, students are expected to: VINIT-1 Learning outcomes After successful completion of this course, students are expected to: VINIT-1 Longing outcomes After successful completion of this course, students are expected to: VINIT-1 Learning outcomes After successful completion of this course, students are expected to: VINIT-1 Learning outcomes After successful completion of this course, students are expected to: VINIT-1 Learning outcomes After successful completion of this course, students are expected to: VINIT-1 Learning outcomes After successful completion of this course, students are expected to: VINIT-1 Learning outcomes After successful completion of this course, students are expected to: VINIT-1 Learning outcomes After successful completion of this course, students are expected to: VINIT-1 Learning outcomes After successful completion of this course, students are expected to: VINIT-1 Learning outcomes After successful completion of this course, students are expected to: VINIT-1 Learning outcomes After successful completion of this course, students are expected to: VINIT-1 Learning outcomes After successful completion of this course, students are expected to: VINIT-1 Learning outcomes After successful completion of this course, students are expected to: VINIT-1 Learning outcomes After successful completion of this course, students are expected to: VINIT-1 Learning outcomes After successful completion of this course, students are expected to: VINIT-1 Learning outcomes After successful completion of this course, students are expected to: VINIT-1 Learning outcomes After successful completion of this course, students are expected to: VINIT-1 Learning outcomes After successful completion of this course, students are expected to: VINIT-1 Learning outcomes Af		DSC Elective Course	
Hours: 45 Unit Course objectives Learning outcomes After successful completion of this course, students are expected to: UNIT-1 UNIT-1 Suggested Readings 1. Lehninger, A I. (2013) Principles of Biochemistry, 6 th edn., Nelson, D L and Cox, M. M. (eds.) WH Freeman and Co., New York. 2. Moat, A. and Foster, J. (2002) Microbial Physiology, 4 th edn., Wiley Interscience Publications, New York. 3. Gottschalk, G. (1986) Bacterial Metabolism, 2 nd edn., Springer-Verlag		XY – 506 (B): Course Title	
Course objectives Learning outcomes After successful completion of this course, students are expected to: UNIT-1 UNIT-1 Suggested Readings 1. Lehninger, A I. (2013) Principles of Biochemistry, 6thedn., Nelson, D L and Cox, M. M. (eds.) WH Freeman and Co., New York. 2. Moat, A. and Foster, J. (2002) Microbial Physiology, 4thedn., Wiley Interscience Publications, New York. 3. Gottschalk, G. (1986) Bacterial Metabolism, 2ndedn., Springer-Verlag			Credits: 3
Learning outcomes After successful completion of this course, students are expected to: UNIT-1 UNIT-1 Suggested Readings 1. Lehninger, A I. (2013) Principles of Biochemistry, 6thedn., Nelson, D L and Cox, M. M. (eds.) WH Freeman and Co., New York. Moat, A. and Foster, J. (2002) Microbial Physiology, 4thedn., Wiley Interscience Publications, New York. Moat, A. and Foster, J. (2002) Microbial Physiology, 4thedn., Wiley Interscience Publications, New York. Gottschalk, G. (1986) Bacterial Metabolism, 2thedn., Springer-Verlag	Unit	Topics	Lectures
After successful completion of this course, students are expected to: UNIT-1 Suggested Readings 1. Lehninger, A I. (2013) Principles of Biochemistry, 6 th edn., Nelson, D L and Cox, M. M. (eds.) WH Freeman and Co., New York. 2. Moat, A. and Foster, J. (2002) Microbial Physiology, 4 th edn., Wiley Interscience Publications, New York. 3. Gottschalk, G. (1986) Bacterial Metabolism, 2 nd edn., Springer-Verlag		Course objectives •	
Suggested Readings 1. Lehninger, A I. (2013) Principles of Biochemistry, 6 th edn., Nelson, D L and Cox, M. M. (eds.) WH Freeman and Co., New York. 2. Moat, A. and Foster, J. (2002) Microbial Physiology, 4 th edn., Wiley Interscience Publications, New York. 3. Gottschalk, G. (1986) Bacterial Metabolism, 2 nd edn., Springer-Verlag		After successful completion of this course, students are expected to:	
Readings D L and Cox, M. M. (eds.) WH Freeman and Co., New York. Moat, A. and Foster, J. (2002) Microbial Physiology, 4 th edn., Wiley Interscience Publications, New York. Gottschalk, G. (1986) Bacterial Metabolism, 2 nd edn., Springer-Verlag	UNIT-1		
Readings D L and Cox, M. M. (eds.) WH Freeman and Co., New York. Moat, A. and Foster, J. (2002) Microbial Physiology, 4 th edn., Wiley Interscience Publications, New York. Gottschalk, G. (1986) Bacterial Metabolism, 2 nd edn., Springer-Verlag			
Readings D L and Cox, M. M. (eds.) WH Freeman and Co., New York. Moat, A. and Foster, J. (2002) Microbial Physiology, 4 th edn., Wiley Interscience Publications, New York. Gottschalk, G. (1986) Bacterial Metabolism, 2 nd edn., Springer-Verlag			
Readings D L and Cox, M. M. (eds.) WH Freeman and Co., New York. Moat, A. and Foster, J. (2002) Microbial Physiology, 4 th edn., Wiley Interscience Publications, New York. Gottschalk, G. (1986) Bacterial Metabolism, 2 nd edn., Springer-Verlag			
Readings D L and Cox, M. M. (eds.) WH Freeman and Co., New York. Moat, A. and Foster, J. (2002) Microbial Physiology, 4 th edn., Wiley Interscience Publications, New York. Gottschalk, G. (1986) Bacterial Metabolism, 2 nd edn., Springer-Verlag			
Readings D L and Cox, M. M. (eds.) WH Freeman and Co., New York. Moat, A. and Foster, J. (2002) Microbial Physiology, 4 th edn., Wiley Interscience Publications, New York. Gottschalk, G. (1986) Bacterial Metabolism, 2 nd edn., Springer-Verlag			
Readings D L and Cox, M. M. (eds.) WH Freeman and Co., New York. Moat, A. and Foster, J. (2002) Microbial Physiology, 4 th edn., Wiley Interscience Publications, New York. Gottschalk, G. (1986) Bacterial Metabolism, 2 nd edn., Springer-Verlag			
Readings D L and Cox, M. M. (eds.) WH Freeman and Co., New York. Moat, A. and Foster, J. (2002) Microbial Physiology, 4 th edn., Wiley Interscience Publications, New York. Gottschalk, G. (1986) Bacterial Metabolism, 2 nd edn., Springer-Verlag			
Readings D L and Cox, M. M. (eds.) WH Freeman and Co., New York. Moat, A. and Foster, J. (2002) Microbial Physiology, 4 th edn., Wiley Interscience Publications, New York. Gottschalk, G. (1986) Bacterial Metabolism, 2 nd edn., Springer-Verlag			
Readings D L and Cox, M. M. (eds.) WH Freeman and Co., New York. Moat, A. and Foster, J. (2002) Microbial Physiology, 4 th edn., Wiley Interscience Publications, New York. Gottschalk, G. (1986) Bacterial Metabolism, 2 nd edn., Springer-Verlag	Cuanata 1	1 I I I CD: 1 CD:	
 Moat, A. and Foster, J. (2002) Microbial Physiology, 4thedn., Wiley Interscience Publications, New York. Gottschalk, G. (1986) Bacterial Metabolism, 2ndedn., Springer-Verlag 			
Interscience Publications, New York. 3. Gottschalk, G. (1986) Bacterial Metabolism, 2 nd edn., Springer-Verlag			
Verlag			
		Verlag 4.	

	DSC Core (Practical)			
	XY – 507: Course title			
Total Hours: 60		Credits: 4		
Unit	Topics	Lectures		
	Course objectives •			
	Learning outcomes After successful completion of this course, students are expected to: •			
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Note: Mandatory to complete at least 12-13 Practicals			

DSC Core (Practical)			
XY – 508: Course title			
Total Hours: 60		Credits: 4	
	Topics	Lectures	
	Course objectives		
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	Learning outcomes After successful completion of this course, students are expected to: •		
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Note: Mandatory to complete at least 12-13 Practicals			

	DSC Core (Practical)			
	XY – 509: Course title			
Total Hours: 60		Credits: 4		
Experiment	Topics	Lectures		
	Course objectives			
	Learning outcomes After successful completion of this course, students are expected to: •			
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Note: Manda	atory to complete at least 12-13 Practicals	
Suggested	1. Lehninger, A I. (2013) Principles of Biochemistry, 6 th edn.,	
Readings	Nelson, D L and Cox, M. M. (eds.) WH Freeman and Co., New	
	York.	
	2. Moat, A. and Foster, J. (2002) Microbial Physiology, 4 th edn.,	
	Wiley Interscience Publications, New York.	
	3. Gottschalk, G. (1986) Bacterial Metabolism, 2 nd edn., Springer-	
	Verlag 4.	
	4.	

	Non Credit Audit Course (Any one)			
	AC - 501 (A/ B/ C: NSS / NCC / Sports)			
Total		No		
Hours: 30		Credits		
	Topics	Lectures		
	Course objectives			
	•			
	Learning outcomes			
	After successful completion of this course, students are expected to:			
	•			
Suggested	4. Lehninger, A I. (2013) Principles of Biochemistry, 6 th edn., Nelson,			
Readings	D L and Cox, M. M. (eds.) WH Freeman and Co., New York.			
	5. Moat, A. and Foster, J. (2002) Microbial Physiology, 4 th edn., Wiley			
	Interscience Publications, New York.			
	interest in a content of the content			

6	6.		G.	(1986)	Bacterial	Metabolism,	2 nd edn.,	Springer-	
		Verlag							
7	7.								

Distribution of Course papers for T. Y.B. Sc. (Subject Name) Semester: VI

Discipline	Course Type			Credits	Hours/week (Clock hours)	Total Teaching hours	Mark (Tota	s I 100)
					,		CA	UA
DSC	Core I	XY-601		3	3	45	40	60
	Core II	XY-602		3	3	45	40	60
	Core III	XY-603		3	3	45	40	60
	Core IV	XY-604		3	3	45	40	60
DSC Skill Enhancemen t Course (SEC)	Skill Based	XY-605		3	3	45	40	60
DSC Elective Course	Elective Course (Any one)	XY-606 (A) XY-606 (B)		3	3	45	40	60
DSC	Core	XY-607		2	4 (per batch)	60	40	60
	(Practical	XY-608		2	4 (per batch)	60	40	60
)	XY-609		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	

	DSC Core Courses					
	XY - 601: Course Title					
Total Hours: 45		Credits: 3				
Unit	Topics	Lectures				
	Course objectives •					
	Learning outcomes After successful completion of this course, students are expected to: •					
UNIT-1						
Suggested	1. Lehninger, A I. (2013) Principles of Biochemistry, 6 th edn., Nelson,					

Readings	 D L and Cox, M. M. (eds.) WH Freeman and Co., New York. Moat, A. and Foster, J. (2002) Microbial Physiology, 4thedn., Wiley Interscience Publications, New York. Gottschalk, G. (1986) Bacterial Metabolism, 2ndedn., Springer-Verlag 	
	XY - 602: Course title	
Total	A1 - 002: Course title	
Hours: 45		Credits: 3
Unit	Topics	Lectures
	Course objectives	
	Learning outcomes After successful completion of this course, students are expected to: •	
UNIT-1		
Suggested Readings	 Lehninger, A I. (2013) Principles of Biochemistry, 6thedn., Nelson, D L and Cox, M. M. (eds.) WH Freeman and Co., New York. Moat, A. and Foster, J. (2002) Microbial Physiology, 4thedn., Wiley Interscience Publications, New York. Gottschalk, G. (1986) Bacterial Metabolism, 2ndedn., Springer-Verlag 	
	Verlag 4.	

	XY - 603: Course Title					
Total Hours: 45		Credits: 3				
Unit	Topics	Lectures				
	Course objectives					
	•					
	Learning outcomes After successful completion of this course, students are expected to:					
UNIT-1						
·						

Suggested	1. Lehninger, A I. (2013) Principles of Biochemistry, 6 th edn., Nelson,	
Readings	D L and Cox, M. M. (eds.) WH Freeman and Co., New York.	
	2. Moat, A. and Foster, J. (2002) Microbial Physiology, 4 th edn., Wiley	
	Interscience Publications, New York.	
	3. Gottschalk, G. (1986) Bacterial Metabolism, 2 nd edn., Springer-	
	Verlag	
	4.	
	T.	

	XY - 604: Course Title	
Total Hours: 45		Credits: 3
Unit	Topics	Lectures
	Course objectives	
	Learning outcomes After successful completion of this course, students are expected to: •	
UNIT-1		
Suggested Readings	1. Lehninger, A I. (2013) Principles of Biochemistry, 6 th edn., Nelson, D L and Cox, M. M. (eds.) WH Freeman and Co., New York.	
	2. Moat, A. and Foster, J. (2002) Microbial Physiology, 4 th edn., Wiley Interscience Publications, New York.	
	3. Gottschalk, G. (1986) Bacterial Metabolism, 2 nd edn., Springer-Verlag	
	4.	

DSC Skill Enhancement Course (SEC)SEC-IV: Skill Based					
	XY - 605: Course Title				
Total		Credits: 3			

Hours: 45					
Unit	Topics				
	Course objectives				
	•				
	Learning outcomes				
	After successful completion of this course, students are expected to:				
	•				
UNIT-1					
Suggested	1. Lehninger, A I. (2013) Principles of Biochemistry, 6 th edn., Nelson,				
Readings	D L and Cox, M. M. (eds.) WH Freeman and Co., New York.				
	2. Moat, A. and Foster, J. (2002) Microbial Physiology, 4 th edn., Wiley				
	Interscience Publications, New York.				
	3. Gottschalk, G. (1986) Bacterial Metabolism, 2 nd edn., Springer-				
	Verlag				
	4.				
	l ···				

	DSC Elective Course (Any one)					
	XY – 606 (A): Course Title					
Total Hours: 45		Credits: 3				
Unit	Topics	Lectures				
	Course objectives •					
	Learning outcomes After successful completion of this course, students are expected to: •					
UNIT-1						

Suggested	1.	Lehninger, A I. (2013) Principles of Biochemistry, 6 th edn., Nelson,	
Readings		D L and Cox, M. M. (eds.) WH Freeman and Co., New York.	
	2.	Moat, A. and Foster, J. (2002) Microbial Physiology, 4 th edn., Wiley	
		Interscience Publications, New York.	
	3.	Gottschalk, G. (1986) Bacterial Metabolism, 2 nd edn., Springer-	
		Verlag	
	4.		

	DSC Elective Course					
	XY – 606 (B): Course Title					
Total Hours: 45						
Unit	Topics	Lectures				
	Course objectives •					
	Learning outcomes After successful completion of this course, students are expected to: •					
UNIT-1						
Suggested Readings	 Lehninger, A I. (2013) Principles of Biochemistry, 6thedn., Nelson, D L and Cox, M. M. (eds.) WH Freeman and Co., New York. Moat, A. and Foster, J. (2002) Microbial Physiology, 4thedn., Wiley Interscience Publications, New York. Gottschalk, G. (1986) Bacterial Metabolism, 2ndedn., Springer-Verlag 					

DSC Core (Practical Course)			
XY – 607: Course title			
Total Hours: 60		Credits: 4	
Unit	Topics	Lectures	
	Course objectives		
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	Learning outcomes After successful completion of this course, students are expected to: •		

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Note: Mand	atory to complete at least 12-13 Practicals	
Suggested	1. Lehninger, A I. (2013) Principles of Biochemistry, 6 th edn., Nelson,	
Readings	D L and Cox, M. M. (eds.) WH Freeman and Co., New York.	
	2. Moat, A. and Foster, J. (2002) Microbial Physiology, 4 th edn., Wiley	
	Interscience Publications, New York.	
	3. Gottschalk, G. (1986) Bacterial Metabolism, 2 nd edn., Springer-	
	Verlag	
	4.	
L		

DSC Core (Practical course)		
XY – 608: Course title		
Total Hours: 60		Credits: 4
	Topics	Lectures
	Course objectives •	
	Learning outcomes After successful completion of this course, students are expected to: •	
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9		
10		
11		
12		
13		
14		
15		
Note: Mandatory to complete at least 12-13 Practicals		
Suggested	1. Lehninger, A I. (2013) Principles of Biochemistry, 6 th edn., Nelson,	

Readings		D L and Cox, M. M. (eds.) WH Freeman and Co., New York.	
	2.	Moat, A. and Foster, J. (2002) Microbial Physiology, 4 th edn., Wiley	
		Interscience Publications, New York.	
	3.	Gottschalk, G. (1986) Bacterial Metabolism, 2 nd edn., Springer-	
		Verlag	
	4.		

	DSC Core (Practical course)		
XY – 609: Course title			
Total Hours: 60		Credits: 4	
Experiment	Topics	Lectures	
	Course objectives		
	•		
	Learning outcomes		
	After successful completion of this course, students are expected to:		
	•		
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11 12			
13			
14			
15			
	tory to complete at least 12-13 Practicals		
Suggested	1. Lehninger, A I. (2013) Principles of Biochemistry, 6 th edn.,		
Readings			
Readings	Nelson, D L and Cox, M. M. (eds.) WH Freeman and Co., New		
	York.		
	2. Moat, A. and Foster, J. (2002) Microbial Physiology, 4 th edn.,		
	Wiley Interscience Publications, New York.		
	3. Gottschalk, G. (1986) Bacterial Metabolism, 2 nd edn., Springer-		
	Verlag		
	4.		

Non Credit Audit Course: Elective Audit Course (Any one)		
AC – 601 (A/ B/ C: Soft skill / Yoga / Practicing Cleanliness)		
Total		No
Hours: 30		Credits
	Topics	Lectures
	Course objectives	
	•	

	Learning outcomes	
	After successful completion of this course, students are expected to:	
	•	
Suggested	1. Lehninger, A I. (2013) Principles of Biochemistry, 6 th edn., Nelson,	
Readings	D L and Cox, M. M. (eds.) WH Freeman and Co., New York.	
	2. Moat, A. and Foster, J. (2002) Microbial Physiology, 4 th edn., Wiley	
	Interscience Publications, New York.	
	3. Gottschalk, G. (1986) Bacterial Metabolism, 2 nd edn., Springer-	
	Verlag	
	4.	