

School of Science
Department of Biological Sciences
NEP 2020 - Course Structure

Programme Name: Bachelor of Science (Microbiology) Honos. / Honos with Research)
Semester – I **Batch: AY 23-24 onwards**

Sr. No.	Core	Course Code	Course Name	Teaching Scheme (Hrs./Week)				Examination Scheme				Total Marks
				L	T	P	C	Formative Assessment CIA		Summative Assessment ESE		
								Course	Lab	Course	Lab	
MAJOR (MANDATORY + ELECTIVES)												
1	Major	NYMI101	Microbial Diversity	3	-	-	3	50	--	100	--	100
2	Major	NYMI102	Principles of Microbiology	3	-	-	3	50	--	100	--	100
MINOR: NA												
NA												
Open Electives (OE)*												
3	Mandatory		Open Elective I	4	--	--	4	50	--	100	--	100
Vocational and Skill Enhancement (VSEC)												
4	VSC	NYMI111	Bioinstrumentation - I	--	--	4	2	--	50	--	50	100
5	SEC	NSSS01	Biofertilizers	--	--	4	2	--	50	--	50	100
Ability/Value Education Courses/ Indian Knowledge System(AEC/VEC/IKS)*												
6	AEC		Ability Enhancement Courses - I	--	--	4	2	--	50	--	50	100
7	VEC		Value Education Courses- I	--	--	4	2	--	50	--	50	100
8	IKS		Indian Knowledge System - I	--	--	4	2	--	50	--	50	100
OJT/FP/CEP/CC/RP												
9	CC	NYMI12	Yoga and Meditation	--	--	4	2	--	50	--	50	100
Total							22					

CIA: Continuous Internal Assessment ESE: End Semester Theory Exam. L: Theory Lecture, T: Tutorial, P: Practical	OJT – On Job Training FP – Field Project CEP – Community Engagement Project CC – Curricular Course RP – Research Project * - Refer University Notification	CIA	Weightage	Description
		CIA 1	10%	Home Assignment
		CIA 2	20%	Mid-Term Exam (MTE)
		CIA 3	10%	Activity/Project and research based learning along with seminar presentation
		CIA 4	10%	Behavioural Attitude +General Discipline Theory +Practical attendance
		CIA TOTAL	50%	
Written Examination – End Semester Exam (ESE)			50%	
TOTAL			100%	

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School of Science
Department of Biological Sciences
NEP 2020 - Course Structure

Programme Name: Bachelor of Science (Microbiology) Honos. / Honos with Research)
Semester – II **For the Batch: AY 23-24 onwards**

Sr. No.	Core	Course Code	Course Name	Teaching Scheme (Hrs./Week)				Examination Scheme				Total Marks
				L	T	P	C	Formative Assessment CIA		Summative Assessment ESE		
								Course	Lab	Course	Lab	
MAJOR (MANDATORY + ELECTIVES)												
1	Major	NYMI201	Techniques in Microbiology	3	-	-	3	50	--	100	--	100
2	Major	NYMI202	Fundamentals of Biochemistry	3	-	-	3	50	--	100	--	100
MINOR												
3	Minor	NYMI.....	Minor - I	2	--		3	50	--	100	--	100
Open Electives (OE)*												
4	Mandatory		Open Elective - II	4	--		3	50	--	100	--	100
Vocational and Skill Enhancement (VSEC)												
5	SEC	NYMI211	Bioinstrumentation - II	--	--	4	2	--	50	--	50	100
6	VSC	NSSS02	Wine Technology	--	--	4	2	--	50	--	50	100
Ability/Value Education Courses/ Indian Knowledge System(AEC/VEC/IKS)*												
7	AEC		Ability Enhancement Courses - II	--	--	4	2	--	50	--	50	100
8	VEC		Value Education Courses- II	--	--	4	2	--	50	--	50	100
OJT/FP/CEP/CC/RP												
9	CC	NYMI212	SUN Clubs	--	--	4	2	--	50	--	50	100
TOTAL				12	-	20	22	200	250	400	250	900

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		CIA 1	10%	Home Assignment
		CIA 2	20%	Mid-Term Exam (MTE)
		CIA 3	10%	Activity/Project and research based learning along with seminar presentation
		CIA 4	10%	Behavioural Attitude +General Discipline Theory +Practical attendance
		CIA TOTAL	50%	
Written Examination – End Semester Exam (ESE)			50%	
		TOTAL	100%	

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NEP 2020 - Course Structure

MINOR - I			
Sr. No	Semester	Course Code	Name of the course (Choose any One)
1	II - VI	NYMIM01 - 10	Biotechnology (I – V)
2		NYMIM11 -20	Chemistry (I – V)
3		NYMIM21 -30	Forensic Sciences (I – V)
4		NYMIM31-40	Mathematics (I – V)
5		NYMIM41-50	Physics (I – V)

Exit Option: Award of UG certificate in Major with 44 credits and additional 4 credits of Internship or Continue with Major and Minor.

School of Science
Department of Biological Sciences
NEP 2020 - Course Structure

Programme Name: Bachelor of Science (Microbiology) Honos. / Honos with Research)
Semester – III **For the Batch: AY 23-24 onwards**

Sr. No.	Core	Course Code	Course Name	Teaching Scheme (Hrs./Week)				Examination Scheme				Total Marks
				L	T	P	C	Formative Assessment CIA		Summative Assessment ESE		
								Course	Lab	Course	Lab	
MAJOR (MANDATORY + ELECTIVES)												
1	Major	NYMI301	Bacterial Cytology and Biochemistry	4	-	-	4	50	--	100	--	100
2	Major	NYMI302	Air, Water and Soil Microbiology	4	-	-	4	50	--	100	--	100
MINOR												
3	Minor	NYMI.....	Minor - II	4	--		4	50	--	100	--	100
Open Electives (OE)*												
4	Mandatory		Open Elective – III(SWAYAM)	2	--		2	50	--	100	--	100
Vocational Skill Course (VSC)												
5	VSC	NYMI311	Basic Techniques in Microbiology	--	--	4	2	--	50	--	50	100
Ability/Value Education Courses/ Indian Knowledge System (AEC/VEC/IKS)*												
6	AEC		Ability Enhancement Courses - III	--	--	4	2	--	50	--	50	100
OJT/FP/CEP/CC/RP												
7	FP		Field Project	--	--	4	2	--	50	--	50	100
8	CC		Co – curricular course	--	--	4	2	--	50	--	50	100
TOTAL				14	-	16	22	200	200	400	200	800

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		CIA 1	10%	Home Assignment
		CIA 2	20%	Mid-Term Exam (MTE)
		CIA 3	10%	Activity/Project and research based learning along with seminar presentation
		CIA 4	10%	Behavioural Attitude +General Discipline Theory +Practical attendance
		CIA TOTAL	50%	
Written Examination – End Semester Exam (ESE)			50%	
TOTAL			100%	

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NEP 2020 - Course Structure

MINOR - II			
Sr. No	Semester	Course Code	Name of the course (Choose any One)
1	II - VI	NYMIM01 - 10	Biotechnology (I – V)
2		NYMIM11 -20	Chemistry (I – V)
3		NYMIM21 -30	Forensic Sciences (I – V)
4		NYMIM31-40	Mathematics (I – V)
5		NYMIM41-50	Physics (I – V)

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NEP 2020 - Course Structure

Programme Name: Bachelor of Science (Microbiology) Honos. / Honos with Research))
Semester – IV **For the Batch: AY 23-24 onwards**

Sr. No.	Core	Course Code	Course Name	Teaching Scheme (Hrs./Week)				Examination Scheme				Total Marks
				L	T	P	C	Formative Assessment CIA		Summative Assessment ESE		
								Course	Lab	Course	Lab	
MAJOR (MANDATORY + ELECTIVES)												
1	Major	NYMI401	Cell Biology & Genetics	4	-	-	4	50	--	100	--	100
2	Major	NYMI402	Molecular Biology	4	-	-	4	50	--	100	--	100
MINOR												
3	Minor	NYMI.....	Minor - III	4	--		4	50	--	100	--	100
Open Electives (OE)*												
4	Mandatory		Open Elective – IV(SWAYAM)	2	--		2	50	--	100	--	100
Skill Enhancement Course (SEC)												
5	SEC	NYMI411	Genetics and Molecular Biology Laboratory	--	--	4	2	--	50	--	50	100
Ability/Value Education Courses/ Indian Knowledge System (AEC/VEC/IKS)*												
6	AEC		Ability Enhancement Courses - IV	--	--	4	2	--	50	--	50	100
OJT/FP/CEP/CC/RP												
7	CEP		Community Engagement Project	--	--	4	2	--	50	--	50	100
8	CC		Co – curricular course	--	--	4	2	--	50	--	50	100
TOTAL				14	-	16	22	200	200	400	200	800

CIA: Continuous Internal Assessment ESE: End Semester Theory Exam. L: Theory Lecture, T: Tutorial, P: Practical	OJT – On Job Training FP – Field Project CEP – Community Engagement Project CC – Curricular Course RP – Research Project * - Refer University Notification	CIA	Weightage	Description
		CIA 1	10%	Home Assignment
		CIA 2	20%	Mid-Term Exam (MTE)
		CIA 3	10%	Activity/Project and research based learning along with seminar presentation
		CIA 4	10%	Behavioural Attitude +General Discipline Theory +Practical attendance
		CIA TOTAL	50%	
Written Examination – End Semester Exam (ESE)		50%		
TOTAL		100%		

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NEP 2020 - Course Structure

MINOR - III			
Sr. No	Semester	Course Code	Name of the course (Choose any One)
1	II - VI	NYMIM01 - 10	Biotechnology (I – V)
2		NYMIM11 -20	Chemistry (I – V)
3		NYMIM21 -30	Forensic Sciences (I – V)
4		NYMIM31-40	Mathematics (I – V)
5		NYMIM41-50	Physics (I – V)

Exit Option: Award of UG Diploma in Major and Minor with 88 credits and additional 4 credits core NSQF Course / Internship or Continue with Major and Minor

School of Science
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NEP 2020 - Course Structure

Programme Name: Bachelor of Science (Microbiology) Honos. / Honos with Research)
Semester – V **For the Batch: AY 23-24 onwards**

Sr. No.	Core	Course Code	Course Name	Teaching Scheme (Hrs./Week)				Examination Scheme				Total Marks
				L	T	P	C	Formative Assessment CIA		Summative Assessment ESE		
								Course	Lab	Course	Lab	
MAJOR (MANDATORY + ELECTIVES)												
1	Major	NYMI501	Medical Microbiology	4	-	-	4	50	--	100	--	100
2	Major	NYMI502	Immunology	4	-	-	4	50	--	100	--	100
3	Major	NYMI511	Medical Microbiology Laboratory	-	-	4	2	--	50	--	50	100
Major Elective - I												
4	NYMI50.....		Major Elective - I	4	-	-	4	50	-	100	-	100
Minor												
5	Minor	NYMI.	Minor - IV	3	--		3	50	--	100	--	100
Vocational Skill Courses (VSC)												
6	VSC		Immunology Laboratory	-	-	4	2	--	50	--	50	100
FP/CEP												
7	FP / CEP		Filed Project /Community Engagement Project	--	--	4	2	--	50	--	50	100
TOTAL				16	-	12	22	200	150	400	150	700

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		CIA 1	10%	Home Assignment
		CIA 2	20%	Mid-Term Exam (MTE)
		CIA 3	10%	Activity/Project and research based learning along with seminar presentation
		CIA 4	10%	Behavioural Attitude +General Discipline Theory +Practical attendance
		CIA TOTAL	50%	
Written Examination – End Semester Exam (ESE)		50%		
TOTAL		100%		

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NEP 2020 - Course Structure

MINOR - IV			
Sr. No	Semester	Course Code	Name of the course (Choose any One)
1	II - VI	NYMIM01 - 10	Biotechnology (I – V)
2		NYMIM11 -20	Chemistry (I – V)
3		NYMIM21 -30	Forensic Sciences (I – V)
4		NYMIM31-40	Mathematics (I – V)
5		NYMIM41-50	Physics (I – V)

Major Electives – I		
S.No.	Course Code	Course Name
1	NYMI501	Pathology
2	NYMI502	Biomedical Nanotechnology
3	NYMI503	Bioinformatics
4	NYMI504	Computational Biology

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Programme Name: Bachelor of Science (Microbiology) Honos. / Honos with Research)
Semester – VI **For the Batch: AY 23-24 onwards**

Sr. No.	Core	Course Code	Course Name	Teaching Scheme (Hrs./Week)				Examination Scheme				Total Marks
				L	T	P	C	Formative Assessment CIA		Summative Assessment ESE		
								Course	Lab	Course	Lab	
MAJOR (MANDATORY + ELECTIVES)												
1	Major	NYMI601	Enzymology	4	-	-	4	50	--	100	--	100
2	Major	NYMI602	Food and Dairy Microbiology	4	-	-	4	50	--	100	--	100
3	Major	NYMI611	Food and Enzymology Laboratory	-	-	4	2	--	50	--	50	100
Major Elective - II												
4	NYMI60.....		Major Elective - II	4	-	-	4	50	-	100	-	100
Minor												
5	Minor	NYMI.	Minor - V	3	--		3	50	--	100	--	100
OJT												
6	OJT		On Job Training	--	--	8	4	--	50	--	50	100
TOTAL				16	-	12	22	200	100	400	50	600

CIA: Continuous Internal Assessment ESE: End Semester Theory Exam. L: Theory Lecture, T: Tutorial, P: Practical	OJT – On Job Training FP – Field Project CEP – Community Engagement Project CC – Curricular Course RP – Research Project * - Refer University Notification	CIA	Weightage	Description
		CIA 1	10%	Home Assignment
		CIA 2	20%	Mid-Term Exam (MTE)
		CIA 3	10%	Activity/Project and research based learning along with seminar presentation
		CIA 4	10%	Behavioural Attitude +General Discipline Theory +Practical attendance
		CIA TOTAL	50%	
		Written Examination – End Semester Exam (ESE)		50%
		TOTAL	100%	

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NEP 2020 - Course Structure

MINOR - V			
Sr. No	Semester	Course Code	Name of the course (Choose any One)
1	II - VI	NYMIM01 - 10	Biotechnology (I – V)
2		NYMIM11 -20	Chemistry (I – V)
3		NYMIM21 -30	Forensic Sciences (I – V)
4		NYMIM31-40	Mathematics (I – V)
5		NYMIM41-50	Physics (I – V)

Major Elective – II		
S.No.	Course Code	Course Name
1	NYMI601	Genetic Engineering
2	NYMI602	Nanotechnology
3	NYMI603	Aquatic Biology
4	NYMI604	Molecular phylogeny

Exit Option: Award of UG Degree in Major with 132 credits or Continue with Major and Minor

School of Science
Department of Biological Sciences
NEP 2020 - Course Structure

Programme Name: Bachelor of Science (Microbiology) Honos. / Honos with Research)
Semester – VII **For the Batch: AY 23-24 onwards**

Sr. No.	Core	Course Code	Course Name	Teaching Scheme (Hrs./Week)				Examination Scheme				Total Marks
				L	T	P	C	Formative Assessment CIA		Summative Assessment ESE		
								Course	Lab	Course	Lab	
MAJOR (MANDATORY + ELECTIVES)												
1	Major	NYMI701	Industrial Microbiology	4	-	-	4	50	--	100	--	100
2	Major	NYMI702	Food and Beverage Technology	4	-	-	4	50	--	100	--	100
3	Major	NYMI703	Molecular Biophysics	4	-	-	4	50	-	100	-	100
4	Major	NYMI711	Industrial and Beverage Technology Laboratory	-	-	4	2	-	50	-	50	100
Major Elective - III												
5	NYMI.....		Major Elective - III	4	-	-	4	50	-	100	-	100
Minor												
6	Minor		Research Methodology	4	--		4	50	--	100	--	100
TOTAL				20	-	4	22	250	50	500	50	600

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		CIA 1	10%	Home Assignment
		CIA 2	20%	Mid-Term Exam (MTE)
		CIA 3	10%	Activity/Project and research based learning along with seminar presentation
		CIA 4	10%	Behavioural Attitude +General Discipline Theory +Practical attendance
		CIA TOTAL	50%	
		Written Examination – End Semester Exam (ESE)		50%
		TOTAL	100%	

Major Elective – III		
S.No.	Course Code	Course Name
1	NYMI701	Pharmaceutical Microbiology
2	NYMI702	Biofuels
3	NYMI703	Marine Biology
4	NYMI704	Protein Chemistry

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NEP 2020 - Course Structure

Programme Name: Bachelor of Science (Microbiology) Honos. / Honos with Research)
Semester – VIII **For the Batch: AY 23-24 onwards**

Sr. No.	Core	Course Code	Course Name	Teaching Scheme (Hrs./Week)				Examination Scheme				Total Marks
				L	T	P	C	Formative Assessment CIA		Summative Assessment ESE		
								Course	Lab	Course	Lab	
MAJOR (MANDATORY + ELECTIVES)												
1	Major	NYMI801	Microbial Technology and Genetic Engineering	4	-	-	4	50	--	100	--	100
2	Major	NYMI802	Ecology and Environmental Microbiology	4	-	-	4	50	--	100	--	100
3	Major	NYMI803	Pharmaceutical Microbiology	4	-	-	4	50	-	100	-	100
4	Major	NYMI811	Advanced Laboratory Techniques	-	-	4	2	-	50	-	50	100
Major Elective - IV												
5	NYMI.....		Major Elective - IV	4	-	-	4	50	-	100	-	100
OJT												
6	OJT		On Job Training	--	--	8	4	50	--	--	50	100
TOTAL				16	-	12	22	250	100	500	50	600

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		CIA 1	10%	Home Assignment
		CIA 2	20%	Mid-Term Exam (MTE)
		CIA 3	10%	Activity/Project and research based learning along with seminar presentation
		CIA 4	10%	Behavioural Attitude +General Discipline Theory +Practical attendance
		CIA TOTAL	50%	
		Written Examination – End Semester Exam (ESE)		50%
		TOTAL	100%	

Major Elective – IV		
S.No.	Course Code	Course Name
1	NYMI801	Microbial Metabolism
2	NYMI802	Medical Biotechnology
3	NYMI803	Virology
4	NYMI804	Mycology

Four Year UG Honours Degree in Major and Minor with 176 credits

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