

## NARS for Master degree of microbiology and immunology

أب المعرفة والفهم:

المقررات التي تحقق المعايير الأكاديمية للبرامج	مخرجات التعلم المستهدفة ILOs	(ARS) Benchmark	(NARS) المعايير القومية الأكاديمية القياسية العامة لبرامج قطاع الدراسات العليا (درجة الماجستير في الميكروبيولوجيا والمناعة الطبية)
Microbiology & Immunology	A8 – A 14, B7- B13	By the end of the program the graduate should be able to.  1.State and explain the clinical features, etiology, pathogenesis and methods of laboratory diagnosis of infectious diseases and apply that knowledge in the treatment, prevention and control of communicable diseases(Maharashtra Univ)  2.State and explain the principles of immunity and immunological Phenomenon (Maharashtra Univ)  3. Recognize the basic knowledge of Molecular biology techniques (Liverpool Univ).	1) Theories, concepts and specialized knowledge of the learning area and also sciences appropriate to the professional practice.
2. Microbiology & Immunology  Environmental Microbiology  Parasitology  Biochemistry  Epidemiology &Public health  Advanced medical Virology  Advanced medical	A9, A12, A14,A20  B7,B 8,B 12-B14  A2 ,B2  A3,A4,B3  B4  A15,16,B5,6  A17,,B14, B15  A24, B16	Understand and practice the principle of prevention and control of health care associated infections and rational antibiotic policy(Maharashtra Univ).	2) Mutual influence between professional practice and its impacts on the environment.

Mycology	A19,20, B17		
Advanced Hospital Infections	A22, B18		
Advanced genetics	A23, A24, B19, B20		
Advanced medical bacteriology	A25, A26, B21		
Advanced medical Immunology			
Advanced medical Virology	A17, B14, B15	State the recent advances in the field of Medical Microbiology and apply this knowledge in understanding aetiopathogenesis and diagnosis of diseases caused by micro-organisms (Maharashtra Univ)	3) Scientific developments in the field of specialization
Advanced medical Mycology	A24, B16		
Advanced Hospital Infections	A19,20, B17		
Advanced genetics	A22, B18		
Advanced medical bacteriology	A23, A24, B19, B20		
Advanced medical Immunology	A25, A26, B21		
Advanced Hospital Infections	A19,20, B17	Recognize the principle of prevention and control of health care associated infections and rational antibiotic policy.(Maharashtra Univ)	4) Moral and legal ethics of the professional practice in the area of specialization.
Microbiology & Immunology	B9		5) The concepts and principles of quality of the professional practice in the area of specialization.
Advanced Hospital Infections	B13		
Epidemiology & Public health	B6	Successfully implement the chosen research methodology.(Maharashtra Univ)	6) The basics and ethics of scientific research.

ب - القدرات الذهنية :

المقررات التي تحقق المعايير الأكاديمية للبرامج	مخرجات التعلم المستهدفة ILOs	(ARS) Benchmark	(NARS) المعايير القومية الأكاديمية القياسية العامة لبرامج قطاع الدراسات العليا
Environmental Microbiology Parasitology Biochemistry Epidemiology & Public health Microbiology & Immunology Advanced medical Virology Advanced medical Mycology Advanced genetics	B2 B3 B4, B5, B6 B8- B10, B12, B14, B16 B18	Perform and interpret immunological and serological tests (Maharashtra Univ)	1) Analyze and evaluate of information in the field of specialization and make full use of such information to solve problems.
Epidemiology & Public health Microbiology & Immunology Advanced Hospital Infections	B5 B13 B17	Organize the prevention and control of communicable diseases in the community (Maharashtra Univ)	2) Solve specific problems on the basis of limited and contradictory information.
Parasitology Epidemiology & Public health Microbiology & Immunology Advanced medical Virology	B3 B5 B10, B11 B15, B21	Adopt an evidence based, critical and reasoned approach to the prevention of major infectious diseases through the use of immunisation in tropical settings (Liverpool Univ).	3) Demonstrate a high level of competence in the coordination of different sources of knowledge to solve professional problems..
Biochemistry Epidemiology & Public health	B4 B5, B6	Develop skills in the planning, design, undertaking and interpreting of a research project at	4) Carry out a research study and / or writing a scientific methodology study on research problem.

Microbiology & Immunology	B13	Master-level. (Liverpool Univ).  Assess the reliability, results and relevance of research evidence; develop effective approaches to use and monitor this evidence to improve health care(Liverpool Univ).	
Environmental Microbiology	B2	Organize the prevention and control of communicable diseases in the community (Maharashtra Univ)	5) Assess and analyze risks of the professional practice in the field of specialization.
Epidemiology & Public health	B5		
Microbiology & Immunology	B10, B11, B21		
Parasitology	B3 B4	Plan the laboratory investigations for the diagnosis of infectious diseases(Maharashtra Univ)	6) Plan to improve performance in the field of specialization
Biochemistry	B10, B14		
Microbiology & Immunology Advanced genetics	B18		
Advanced genetics	B2		
Advanced medical Mycology			
Epidemiology & Public health	B6	Assess the reliability, results and relevance of research evidence; develop effective approaches to use and monitor this evidence to improve health care (Liverpool Univ)	7) Make career decisions in different professional aspects
Microbiology & Immunology	B13		
Advanced Hospital Infections	B17		

ج -المهارات العملية:

المقررات التي تحقق المعايير الأكاديمية للبرامج	مخرجات التعلم المستهدفة ILOs	(ARS) Benchmark	(NARS) المعايير القومية الأكاديمية القياسية العامة لبرامج قطاع الدراسات العليا
Environmental Microbiology  Biochemistry  Microbiology & Immunology	C1,C2  C4, C5  C8, C9-C14, C16, C21	To be equipped to play a role in a microbiology laboratory in a university or a hospital (Liverpool Univ)	1) Apply modern and principle professional skills in the area of specialization.
Environmental Parasitology  Biochemistry  Microbiology & Immunology	C2 C3  C4  C10, C16, C 17		2) Write and evaluate technical reports.
Epidemiology &Public health  Microbiology & Immunology	C7  C20	Assess the reliability, results and relevance of research evidence; develop effective approaches to use and monitor this evidence to improve health care. (Liverpool Univ	3) Adopt assessment methods and tools existing in the area of specialization

د - مهارات الاتصال:

المقررات التي تحقق المعايير الأكاديمية للبرامج	مخرجات التعلم المستهدفة ILOs	(ARS) Benchmark	(NARS) المعايير القومية الأكاديمية القياسية العامة لبرامج قطاع الدراسات العليا
Epidemiology & Public health Microbiology & Immunology Advanced medical Virology Advanced medical Mycology Advanced genetics Advanced Hospital Infections Advanced bacteriology Advanced Immunology	C6 C7, D21 D21 D21 D21 C18-C20, D21 D21 D21	Understand and practice the principle of prevention and control of health care associated infections and rational antibiotic policy. (Maharashtra Univ)	1) Communicate effectively in different aspects.
Environmental Microbiology  Parasitology  Biochemistry  Epidemiology & Public health Microbiology & Immunology Advanced medical Virology Advanced medical Mycology Advanced genetics Advanced Hospital Infections Advanced bacteriology Advanced Immunology	D1, D-6, D9.  D11  D14  D17, D20 D1, D-6, D9. D1, D-6, D9. D1, D-6, D9. D1, D-6, D9. D1, D-6, D9. D1, D-6, D9. D1, D-6, D9. D1, D-6, D9	To develop key transferable skills in communication, information technology, numeracy, teamworking and self learning (Liverpool Univ)	2) Demonstrate efficient IT capabilities in such a way that serves in the development of the professional practice.
Environmental Microbiology  Parasitology  Biochemistry  Epidemiology & Public health  Microbiology & Immunology Advanced medical Virology Advanced medical Mycology Advanced genetics Advanced Hospital Infections Advanced bacteriology	D2, D9  D13  D15  D12  D2, D9 D2, D9 D2, D9 D2, D9 D2, D9 D2, D9		3) Adopt self-assessment and specify his needs of personal learning.

Advanced Immunology	D2, D9		
Environmental Microbiology Biochemistry	D1, D3, D6, D10 D10, D14		4) Use different resources for information and knowledge.
Epidemiology & Public health	D10, D14, D16, D18		
Microbiology & Immunology			
Advanced medical Virology	D1, D3, D6 .		
Advanced medical Mycology	D10, D22		
Advanced genetics	D1, D3, D6 .		
Advanced Hospital Infections	D10, D22		
Advanced bacteriology	D1, D3, D6 .		
Advanced Immunology	D10, D22		
	D1, D3, D6 . D10, D22 D1, D3, D6 . D10, D22 D1, D3, D6 . D10, D22 D1, D3, D6 . D10, D22 D1, D3, D6 . D10, D22		
Environmental Microbiology	D5, D9.		5) Establish rules and indicators for assessing the performance of others.
Parasitology	D11		
Biochemistry	D14		
Epidemiology & Public health	D16, D 17, D20		
Microbiology & Immunology	D5, D9.		
Advanced medical Virology	D5, D9.		
Advanced medical Mycology	D5, D9.		
Advanced genetics	D5, D9.		
Advanced Hospital Infections	D5, D9.		
Advanced bacteriology	D5, D9.		
Advanced Immunology	D5, D9.		
Environmental Microbiology	D2, D3, D9, D4.	To develop key transferable skills in communication, information technology, numeracy, teamworking and self learning (Liverpool Univ)	6) Collaborate effectively within multidisciplinary team and lead teams in different professional contexts.
Parasitology	D11		
Biochemistry	D15		
Epidemiology & Public health	D17, D20		
Microbiology & Immunology	D2, D3, D9, D4.		

Advanced medical Virology Advanced medical Mycology Advanced genetics Advanced Hospital Infections Advanced bacteriology Advanced Immunology	D2, D3, D9, D4. D2, D3, D9, D4. D2, D3, D9, D4. D2, D3, D9, D4. D2, D3, D9, D4. D2, D3, D9, D4.		
Environmental Microbiology Microbiology & Immunology Advanced medical Virology Advanced medical Mycology Advanced genetics Advanced Hospital Infections Advanced bacteriology Advanced Immunology	D5, D9		7) Demonstrate a high level of competence in the time management.
Environmental Microbiology  Parasitology  Biochemistry  Epidemiology & Public health  Microbiology & Immunology  Advanced medical Virology  Advanced medical Mycology  Advanced genetics  Advanced Hospital Infections  Advanced bacteriology Advanced Immunology	D1, D3, D5, D9, D10, D21 D10  D10,  D10, D14  D1, D3, D5, D9, D10, D21 D1, D3, D5, D9, D10, D21 D1, D3, D5, D9, D10, D21 D1, D3, D5, D9, D10, D21 D1, D3, D5, D9, D10, D21 D3, D5, D9, D10, D21 D3, D5, D9, D10, D21		8) Continuous self-education.

رئيس القسم  
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