University of Maryland University College (UMUC)

Secondary Biology, 7-12 Grade Teacher Certification

MAT Transcript Review in Biology - NSTA Standards 2003

NSTA Assessment Standards for Certification	Typical Courses Aligned with Standards (Course Samples)	Courses Completed (Include Prefix, number, and Name)	# of Credits
Life processes in living systems; organization of matter and energy	• Biology of Organisms • Biophysics		
Similarities and differences among animals, plants, fungi and viruses	• General Botany • General Zoology		
Principles and practices of biological classification and biological evolution	• Principles of Evolution • Ecology & Evolution		
Ecological systems; interrelationships with environment	• Life in the Oceans • Wildlife Ecology		
Population dynamics	• Population Ecology • Biology of Aging		
Genetics; heredity	• General Genetics • Heredity & Human Affairs		
Cells and cell systems; organisms and relationship to social systems	• Cells & Molecules • Biological Anthropology		
Regulation of biological systems; processes of modeling and investigation	• Forensic Biology • Laboratory Biology		

Applications of biology in environmental quality and health	• Human Health & Disease • Epidemiology & Public Health		
Bioenergetics, biochemical interactions	• Biochemistry • Molecular biology		
Molecular genetics, heredity and base for evolutionary theory and classification	• Molecular Evolution • Race, Genome, & Human evolutionary Theory		
Causes, characteristics of viral, bacterial and parasitic disease	• Epidemiology of Emerging Infections • Bacteria, Viruses, and Health		
Genetic modification, biotechnology, cloning and farming pollution	• Pesticides and the Environment • Genomics		
Historical development, perspectives in biology	• Developmental Biology • Primitive Behavior & Ecology		
How to design, conduct and report research in biology	• Biomedical Research • Intro to Bioinformatics		
Applications of biology and biotechnology in society	• Techniques in Biotechnology • Contemporary Biology		
		TOTAL CREDITS:	

Applicants may qualify to enter the MAT program with a content specialization in Biology if they have an undergraduate major in the certification area, or if they have completed 30 credit hours of coursework in biology.

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Full standards are available at NSTA: http://www.nsta.org/preservice/docs/NSTAstandards2003.pdf