Biological Life Sciences

The following matrix indicates those courses deemed transferable among institutions listed across the top of the matrix. The numbers on the matrix represent the number of semester hours associated with the course at each institution and which institutions have agreed to transfer the commonly numbered course in each row.

A list of the academic discipline liaisons contacts for each institution are listed at the bottom of this document.

Biology

Prefix	Number	GERTA	Course Title	BSC	DCB	DSU	LRSC	MASU	MISU	NDSCS	NDSU	UND	VCSU	WSC	SBC	TMCC	UTTC
BIOL	109	ND:SCI	The Living World							3							
BIOL	111/111L	ND:SCI/ ND:LABSC	Concepts of Biology/Lab	3/1	4	3/1	4	4	4	3/1	3	3/1	4	4	4	4	3/1
BIOL	115/115L	ND:LABSC	Concepts of Anatomy and Physiology	3/1	4					3/1				4			
BIOL	124/124L	ND:SCI/ ND:LABSC	Environmental Science/Lab	3	4		4			3/1	3	2		4			3
BIOL	125/125L	ND:LABSC	Intro to Ecology/Lab	3/1													
BIOL	126/126L	ND:SCI/ ND:LABSC	Human Biology	3/1							3						
BIOL	150/150L*	ND:LABSC	General Biology I/Lab	3/1	4	3/1	4	4	4	3/1	3/1	3/1	4	4	4	4	3/1
BIOL	151/151L*	ND:LABSC	General Biology II/Lab	3/1	4	3/1	4	4	4	3/1	3/1	3/1	4	4	4	4	3/1
BIOL	154/54L	ND:LABSC	General Biology III: Intro to Botany						4								
BIOL	170/170L	ND:LABSC	General Zoology/Lab	3/1	4	3/1				3/1						4	
BIOL/ MICR	202/202L 302/302L	ND:SCI/ ND:LABSC	Concepts of Microbiology/Lab	3/1	4	3/1	4	4	4	3/1	2			3/1	4		
BIOL	211	ND:LABSC	Botany I		4												
BIOL	213		General Pathology	2						3							
BIOL	215/315	ND:SCI	Genetics/Lab			4	3	4	3		3/1	3	4	3/1			

Prefix	Number	GERTA	Course Title	BSC	DCB	DSU	LRSC	MASU	MISU	NDSCS	NDSU	UND	VCSU	WSC	SBC	TMCC	UTTC
BIOL	220/220L	ND:LABSC	Anatomy & Physiology I/Lab	3/1	4	4	4	4	4	3/1	3/1		4	4	4	4	4
BIOL	221/221L	ND:LABSC	Anatomy & Physiology II/Lab	3/1	4	4	4	4	4	3/1	3/1		4	4		4	
BIOL	230	ND:SCI/ ND:LABSC	Ecology		4									3/1			3
BIOL	250/250L	ND:LABSC	Survey of Tropical Biology/Lab	3/1													
BIOL	260		Kinesiology L/L											3/1			
BIOL	296		Field Studies - Wildlife		1-3												

*Note: Students are highly encouraged to complete *both* BIOL 150 and BIOL 151 prior to transfer to avoid difficulty.

BIOL 109 The Living World
This is an introductory level biology course that as no lab. The class is not for biology majors. Includes: Basic concepts in Biology, Natural History, Sociobiology, Human Bio-Social Interaction.

BIOL 111/111L Concepts of Biology/Lab
Concepts of Biology is an introductory level non-majors transferable class. It is designed to meet the requirements of a Lab Science.

1. Basic science literacy, possibly including superficial coverage of cell biology, ecology, human anatomy and physiology, evolution, genetics, and environmental biology.
2. Understanding how science informs cultural perspectives.
3. Understanding the relationship among levels of biological information.
4. Understanding the unity and diversity of life forms.
5. Comprehending methods of inquiry and technology and the applications for society.
6. Integrating knowledge and ideas in science.
7. Understanding and utilizing scientific knowledge.

BIOL 115/115L Concepts of Anatomy and Physiology
One-semester course that integrates the structure and function of the human body. Course includes lab.

BIOL 124/124L Environmental Science/Lab
Relation of humans to their environment.

1. Understanding basic principles of Natural Resource Management.
2. Understand the human cause of current environmental problems and possible solutions.

3. Population demography
4. Sustainable practices
5. Applying principles of ecology that are associated with the study of the environmental science.
6. Learn to apply critical thinking in environmental science.
7. Using the scientific method of inquiry to inform environmental science perspectives.

BIOL 125/125L Intro to Ecology/Lab
Introduce basic ecological concepts; describe the ecological structure, patterns, processes, and interactions of selected ecological communities and their organisms; and discuss human influences on these communities.

BIOL 126/126L Human Biology
Consideration of selected problems in human biology.

BIOL 150/150L General Biology I/Lab
A two-semester sequenced study of the fundamental topics of biology, with an emphasis on cellular biology.
1. Understand cellular and viral structure and function.
2. Understand fundamental biochemical principles.
3. Understand rudimentary classical genetics.
4. Understand rudimentary molecular genetics and have a familiarity with various DNA technologies.
5. Use knowledge about mechanisms of cellular and molecular processes.

BIOL 151/151L General Biology II/Lab
A two-semester sequenced study of the fundamental topics of biology, with an emphasis on organismal biology.
1. Describe the unity and diversity of life, including structure and function and how this relates to the environment.
2. Describe how life (or life forms) has (have) changed and adapted over time.
3. Understand basic evolution and evolutionary processes.
4. Develop an understanding of ecology.

BIOL 154/54L General Biology III: Intro to Botany
Introduction to the biology of plants emphasizing evolution and diversity, plant anatomy and development, water and mineral nutrition, photosynthesis, and plant ecology.

BIOL 170/170L General Zoology/Lab
A survey of the animal kingdom, from simple to complex. Major invertebrate and vertebrate animal groups will be covered with emphasis on structure, function, life history characteristics, and evolutionary advancements of each. Topics of animal ecology, with emphasis on regional species, concludes the course. Prerequisites exist.

BIOL/MICRO 202/302 and 202L/302L Concepts of Microbiology/Lab
A general survey on the characteristics and importance of microorganisms. Including the morphology and physiology of selected microbes including bacteria, viruses, protists, invertebrates, and fungi. With emphasis on the identification, control of microbes, their relationship to human health and disease.

MICR 202/L, BIOL 202/L, MICR 302/L, and BIOL 302/L are all equivalent.

1. Understand the diversity of microbes; in the context of this course, “microbes” include diverse organisms, e.g., viruses, bacteria, fungi, protists, and invertebrates.
2. Discuss the structure and function of microbes.
3. Apply diagnostic tests and procedures used to identify microbes.
4. Analyze the relationship between microbes, disease, and mechanisms of disease.
5. Recognize the role of microbes in microbial ecology.
6. Demonstrate the roles of microbes in community health.

BIOL 211 Botany I

A general botany course covering plant evolutionary history, form, structure, and physiology. Lectures focus on plant diversity through time and general knowledge of plant function with emphasis on North Dakota plants. Labs emphasize cells, tissue, phyla, physiology of plants, and classification. Pre-/Co-requisites: BIOL 150 and BIOL 151 or Instructor Approval.

1. Structure and function of vascular plants, particularly Coniferophyta and Anthophyta.
2. Diversity of plants and plant-like organisms.
3. The ecology and evolution of plan and plant-like organisms.
4. The significance of these organisms to human kind.

BIOL 213 General Pathology

A general overview of the disease process and the mechanisms by which the human body copes with the disease. Also a survey of the more common diseases affecting various body systems.

BIOL 215/315 Genetics/Lab

Study of the basis of heredity with emphasis on structure and function of DNA and Mendelian Genetics.

1. Understanding molecular genetics.
2. Understanding and solving problems in Mendelian (classical) inheritance.
3. Have a familiarity with genetic technologies.
4. Understanding population genetics and evolution.
5. Develop an appreciation for the relationship of genetics to other disciplines, e.g., biochemistry, ethics, economics, and medicine

BIOL 220/220L Anatomy & Physiology I/Lab

Study of structure and function of human body.

1. Students understand the organization of the body from simple to complex, from the chemical level to the system level and the inter-relationships between them.
2. Students gain an understanding of the role and importance of passive and active processes, membrane potentials, and feedback systems have in maintaining homeostasis
3. Understand diagnostic treatments, procedures and technology used to identify and treat human disease and disorders.
4. Understand disease mechanisms in each system.
5. Understand the chemical basis of life and the anatomy and physiology of cells and tissues.
6. Understand body structure and function.

7. Understand the link between homeostatic imbalance and disease.
8. Organ systems that can be covered include musculoskeletal, respiratory, circulatory, nervous, integumentary, endocrine, lymphatic, digestive, reproductive, and urinary.

BIOL 221/221L Anatomy & Physiology II/Lab
Study of structure and function of human body.

1. Students gain a more thorough understanding of the inter-relationships and organizational hierarchy among the systems of the body.
2. Students will gain a more thorough understanding of role of feedback systems, osmosis/diffusion, electrolyte balance, acidosis/alkalosis in maintaining homeostasis.
3. Diagnostic procedures
4. Treatments of disease
5. Organ systems that can be covered include musculoskeletal, respiratory, circulatory, nervous, integumentary, endocrine, lymphatic, digestive, reproductive, and urinary.

BIOL 230 Ecology
A study of terrestrial and aquatic succession from communities through biomes. Basic concepts of the interrelationships of grassland, desert, arctic and marine environments.

BIOL 250/250L Survey of Tropical Biology/Lab
This course will survey the basic concepts of tropical biology and it will provide the student with a sound foundation in tropical ecosystems and biodiversity. This course will include formal lectures and laboratory field work in a tropical setting and when taken with BIOL 296L, it satisfies a four credit lab science requirement. The lecture topics will include tropical plant adaptations and defenses, tropical invertebrate and vertebrate diversity, and conservation issues. Special emphasis will be given to comparing the differences between tropical areas and temperate zone. This course is intended for any student regardless of major or background and there are no prerequisites. Instructor's approval required for admission. Corequisite: BIOL 296L.

BIOL 260 Kinesiology L/L
In-depth study of the musculoskeletal system. Biomechanics of normal and abnormal posture, gait patterns, and body mechanics are presented. Basic evaluative techniques are learned. Prerequisite: BIOL 220 and 221.

BIOL 296 Field Studies – Wildlife
Students combine course learning with practical, hands on work in the field of Wildlife and Fisheries. The student is required to complete assigned research oriented fieldwork. A minimum of 30 hours of work is required to earn one credit.

Fish and Wildlife

Prefix	Number	Gerta	Course Title	DCB
FWLD	121	ND:LABSC	Introduction to Fish and Wildlife Management	4
FWLD	122	ND:LABSC	Wildlife and Fisheries Techniques	4

FWLD	243		Ornithology	4

FWLD 121 Introduction to Fish and Wildlife Management
Field and laboratory methods used in game management. Census methods, history of management in legislation, law enforcement, and careers in wildlife management.

FWLD 122 Wildlife and Fisheries Techniques
Provide a basic understanding of the biological principles involved in wildlife management, upland game, waterfowl, big game, and non-game.

FWLD 243 Ornithology
An introduction to the biology, classification and identification of birds. Students will be required to use binoculars in this class and must provide this equipment on their own.