

Name: \_\_\_\_\_

**NORTH DAKOTA STATE UNIVERSITY**  
College of Agriculture, Food Systems & Natural Resources

T = Transfer Credit  
IP = Course is 'In Progress'

ID: \_\_\_\_\_

**Microbiology**

**Fall 2012**

General Education Requirements - 40 Credits Required					Major Requirements: 33 Credits Required					
Course	Number	Course Title	Credits	Grade	A grade of 'C' or better is required for the Core requirements listed below					
First Year Experience (F)			1 Sem Credit		Course	Number	Course Title	Credits	Grade	
AGRI	189 <sup>1</sup>	Skills for Academic Success	1		MICR	350/350L	General Microbiology I/Lab	3/2		
Communication (C)			12 Sem Credits		MICR	450/450L	Infectious Disease Pathogenes/ Lab	3/2		
COMM	110	Fundamental of Public Speaking	3		MICR	470	Basic Immunology	3		
ENGL	110	College Composition I	3		MICR	471	Immunology & Serology Lab	2		
ENGL	120	College Composition II	3		MICR	475	Animal Virology	3		
MICR	354	Scientific Writing	3		MICR	480	Bacterial Physiology	3		
Quantitative Reasoning (R)			3 Sem Credits		MICR	482	Bacterial Genetics & Phage	3		
STAT	330	Intro Stats	3		MICR	486	Capstone Experience	3		
Science & Technology (S)			10 Sem Credits		<b>ELECTIVES: 6 Credits Required</b> (Refer to department or back side for course options)					
CHEM	121/121L	General Chemistry I/Lab (or higher)	3/1							
CHEM	122	General Chemistry II (or higher)	3							
PHYS	211	College Physics I	3							
Humanities & Fine Arts (A)			6 Sem Credits		<b>RELATED REQUIREMENTS: 35 Credits Required</b>					
			3		AGRI	150 <sup>1</sup>	Ag Orientation (or Vets 150)	1		
			3		BIOC	460/460L	Fund or Biochem & Molec Biology I/Lab	3/1		
Social & Behavioral Sciences (B)			6 Sem Credits		BIOC	461	Fund or Biochem & Molec Biology II	3		
			3		BIOL	150/150L	General Biology I/Lab	3/1		
			3		CHEM	122L	General Chemistry II Lab	1		
Wellness (W)			2 Sem Credits		CHEM	341/341L	Organic Chemistry I/Lab	3/1		
			2		CHEM	342	Organic Chemistry II	3		
Cultural Diversity (D)					MATH	103 and 105 or 146	College Algebra and	3		
Global Perspectives (G)							Trigonometry or	3		
							Applied Calculus (or higher)	4		
					PHYS	211L	College Physics I Lab (or higher)	1		
Electives: Up to 20 Credits to Reach 128					PHYS	212/212L	College Physics II/Lab (or higher)	3/1		
					PLSC	315/315L	Genetics/Lab	3/1		
					<b>BIOLOGY, BOTANY OR ZOOLOGY ELECTIVE: 3 Credits Required</b> (Refer to department for course options)					
					<b>All courses listed on this curriculum guide are required for the major.</b>					
					<b>A pre-veterinary medicine track is available in the microbiology major.</b>					
<sup>1</sup> Students transferring in 24 or more credits do not need to take AGRI 150 or 189.  <b>A 2.50 cumulative GPA is required for graduation</b>					<b>Total Credits Required for Graduation:</b>				<b>128</b>	

**Microbiology**  
**Fall 2012 Continued**  
*(Grade of C or higher required for microbiology electives)*

<b>Microbiology Electives- 6 Credits Required</b>				
<b>Course</b>	<b>Number</b>	<b>Course Title</b>	<b>Credits</b>	<b>Grade</b>
BIOC	487	Molecular Biology of Gene Expression	3	
MICR	463	Clinical Parasitology	2	
MICR	379	Study Abroad	3	
MICR	445	Animal Cell Culture Tech (LAB)	2	
MICR	452	Microbial Ecology	3	
MICR	453	Food Microbiology	3	
MICR	454	Bioprocessing	3	
MICR	464	Etiology of Foodborne Disease	3	
MICR	465	Fundamentals of Animal Disease	3	
MICR	472	Clinical Immunology	3	
MICR	474	Epidemiology	3	
MICR	561	Micro Lab for Pharmacy	1	
MLS	435	Hematology	2	
PPTH	460	Fungal Biology	3	
<b>No more than 3 credits from the following</b>				
MICR	491	Seminar	1	
MICR	494	Individual Study	1-3	
MICR	496	Field Experience	1-3	
MICR	499	Special Topics	1-3	
MICR	370	Beef Cattle Health Management	1	
MICR	371	Dairy Cattle Health Management	1	
MICR	372	Sheep Health Management	1	
MICR	373	Equine Health Management	1	
MICR	374	Swine Health Management	1	
MICR	375	Bison Health Management	1	
MICR	376	Feline Health Management	1	
MICR	377	Canine Health Management	1	
MICR	370-399		1-3	
MICR	491-499		1-3	