FERRIS STATE UNIVERSITY
BioTechnology B.S. Degree

MONTCALM COMMUNITY COLLEGE
Articulation Agreement

THIS PROGRAM IS DESIGNED AS A B.S. DEGREE OPTION FOR STUDENTS WHO HAVE COMPLETED OR ARE COMPLETING AN ASSOCIATE IN SCIENCE DEGREE

Application Deadlines:

1. Transfer students must be admitted 21 days prior to the first day of the semester they plan to attend.

Admission Requirements:

1. A 2.0 overall GPA is required for admission with the completion of a minimum of 12 credits hours.
2. Transfer students must have at least 12 credits at the time of *application* with a minimum 2.0 overall GPA including an English and Mathematics course or they will be considered as first year students.
3. Students must meet Ferris General Education requirements with a 2.0 cumulative GPA or have the MACRAO Stamp on their transcripts. Please contact advisor for details.

FERRIS REQUIRED COURSES		COURSE TITLE *(Pre-requisites in Brackets)*	MONTCALM CC	FSU Sem. Hr.	GRADE	GRADE POINTS
COMMUNICATION COMPETENCE - 12 Credits Required … or … 9 credits w/completion of MACRAO						
COMM	105 or 121	Interpersonal Communication or Fundamentals of Public Speaking	COMM 220 or COMM210	3		
ENGL	150	English 1 (ENGL 074, or ACT of 14, or SAT of 370)	ENGL 100	3		
ENGL	250	English 2 (ENGL 150)	ENGL 101	3		
Choose one: ENGL	311, 321, 323, 325	Advanced Business Writing (ENGL 250 or 211)	FERRIS	3		
SCIENTIFIC UNDERSTANDING – Met with Major						
Lab Science Elec.		*Met w/Major*	MCC	4		
Science Elective		*Met w/Major*	MCC	3-4		
QUANTITATIVE SKILLS – 3 Credits Required						
MATH	115	Intermediate Algebra (MATH 110 with C- grade or better, or ACT of 19, or SAT of 460) If MATH ACT score is 24 or higher, then substitute a free elective	MCC	3-4		
CULTURAL ENRICHMENT - 9 Credits Required … or … 8 credits with completion of MACRAO • Courses must include at least one course at 200-level or higher (transfer-to-Ferris at 200-level) • No more than 5 credit hours in studio art, or "activities" courses in Music or Theatre can be used to complete this requirement • Must complete 3 courses from the following list *Arts, ENGL 212, 250, Foreign Language, History, Humanities, LA 212, LA 250, Literature, Music, Philosophy, Theatre*						
CE Elective		200-level or higher	MCC	3-4		
CE Elective			MCC	3-4		
CE Elective			MCC	3-0		
SOCIAL AWARENESS – 9 Credits Required … or … 8 credit hours with completion of MACRAO • Must complete 3 courses from the list of courses and/or subject areas below • These courses must be in at least two different subject areas • One course must be 200-level or higher (transfer-to-Ferris at 200-level or higher) *Anthropology, Economics, Political Science, Psychology, Sociology*						
SA Elective		200-Level or Higher	MCC	3-4		
SA Elective			MCC	3-4		
SA Elective			MCC	3-0		
• General Education at Ferris: http://www.ferris.edu/HTMLS/academics/gened/courses.html • Transfer Equivalencies: http://www.ferris.edu/admissions/Transfer/WebPages/homepage1.cfm • In the following General Education categories, one course may meet more than one general education requirement: *Cultural Enrichment, Social Awareness, Global Consciousness, and Race-Ethnicity-Gender*						

FERRIS STATE UNIVERSITY
BioTechnology B.S. Degree

MONTCALM COMMUNITY COLLEGE
Articulation Agreement

FERRIS REQUIRED COURSES		COURSE TITLE *Ferris prerequisites shown in brackets ( )*	MONTCALM CC	FSU Sem. Hrs.	GRADE	GRADE PTS.
MAJOR – 91 credit minimum No grade lower than a C- allowed for graduation						
BIOL BIOL	121 & 122	General Biology 1 *(CHEM 114 or 121 concurrent)* General Biology 2 *(BIOL 121 & CHEM 114 or 121)* *Botany* *Zoology*	BIOL 121 & BIOL 122 or BIOL 110 & BIOL 115	8 or 8		
BIOL Or BIOL BIOL	205 321 322	Human Anatomy/Physiology *(CHEM 114)* or Human Physiology & Anatomy 1 *(BIOL 122 & CHEM 122)* Human Physiology & Anatomy 2 *(BIOL 321)*	BIOL 202 & BIOL 203	8		
BIOL	375	Principles of Genetics *(BIOL 122 and a BIO/CHEM course)*				
BIOL	386	Microbiology & Immunology *(BIOL 205/322 & a BIO/CHEM course)*				
BIOL	388	Advanced Immunology Laboratory *(BIOL 386)*				
BIOL	470	Molecular Genetics *(CHEM 364 and BIOL 375)*				
BIOL	471	Biotech 2: Recombinant DNA Lab *(BIOL 470)*				
BIOL	472	Proteins *(BIOL 122 and CHEM 364)*				
BIOL	473	Biotech 3: Proteins Laboratory *(CHEM 364 & BIOL 472)*				
BIOL	474	Advanced Cell & Molecular Biology *(CHEM 364 & BIOL 375)*				
BIOL	475	Bioinformatics *(BIOL 375)*				
CHEM	121	General Chemistry 1 *(MATH 115 and prior CHEM)*	CHEM 220	5		
CHEM	122	General Chemistry 2 *(CHEM 121)*	CHEM 221	5		
CHEM	231	Quantitative Analysis *(CHEM 122)*				
CHEM	321	Organic Chemistry 1 *(CHEM 122)*				
CHEM	322	Organic Chemistry 2 *(CHEM 321)*				
CHEM	332	Biochemistry Lab 1 *(CHEM 322, corequisite = CHEM 364)*				
CHEM	333	Biochemistry Lab 2 *(CHEM 332)*				
CHEM	364	Biochemistry *(PHCH 320 is acceptable)* *(CHEM 322)*				
CHEM	474	Advanced Biochemistry *(CHEM 364)*				
MATH	130	Advanced Algebra & Analytical Trigonometry (MATH 120 or placement)	MATH 159	4		
MATH	251	Statistics for the Life Sciences *(MATH 130)*	MATH 190	3		
PHYS	211	Introductory Physics 1 *(MATH 120)*	PHYS 230	4		
Choose One: BIOL BIOL CHEM	 491 497 497	 Biotechnology Internship *(instructor consent)* Independent Studies in Biology *(instructor consent)* Independent Studies in Chemistry *(instructor consent)*		3-6		
TOTAL CREDIT HOURS:						

Graduation Requirements:

1. 2.0 cumulative GPA in all Biotechnology/program courses. No grade lower than C- in science and math courses allowed for graduation.
2. 30 minimum FSU semester hours must be completed to fulfill FSU residency requirements.
3. 121 credit hours are required for graduation.

PROGRAM COORDINATOR
Bradley J Isler, Ph.D.
Assistant Professor of Biology
Phone: (231) 591-2641
Email: islerb@ferris.edu