

**Recommended Academic Plan
Microbiology (MICRB at UP)
Effective (For students entering Summer 2010 and later)**

Semester 1	Credits	Semester 2	Credits
~ MATH 140 (GQ) Calculus with Analytic Geometry I	4	MATH 141(GQ)Calculus with Analytic Geometry II	4
~ CHEM 110 (GN) Chemical Principles	3	~ CHEM 112 (GN) Chemical Principals	3
~ CHEM 111 (GN) Experimental Chemistry	1	CHEM 113 (GN) Experimental Chemistry	1
PSU 016 First-Year Seminar	1	ENGL 15 OR 30 (GWS) Composition/Honors Composition	3
Arts (GA), Humanities (GH) or Social Behavioral Sciences (GS)	6	PHYS 250 (GN)Introduction Physics I	4
Total Credits:	15	Total Credits:	15
Semester 3	Credits	Semester 4	Credits
CHEM 210 Organic Chemistry	3	CHEM 212 Organic Chemistry	3
% MICRB 251 Molecular & Cell Biology I	3	CHEM 213 Laboratory in Organic Chemistry	2
PHYS 251 (GN)Introductory Physics II	4	% MICRB 252 Molecular & Cell Biology II	3
± LIST C FREE ELECTIVE	3	% MICRB 201 Introductory Microbiology	3
Arts (GA), Humanities (GH) or Social Behavioral Sciences (GS)	3	MICRB 202 Introductory Microbiology Laboratory	2
		BIOL 322 Genetic Analysis	3
Total Credits:	16	Total Credits:	16
Semester 5	Credits	Semester 6	Credits
Arts (GA), Humanities (GH) or Social Behavioral Sciences (GS)	3	BMB 402 General Biochemistry	3
BMB 401 General Biochemistry	3	*MICRB ELECT	3
*MICRB ELECT	3	#MICRB ELECT	2
MICRB 421W Laboratory of General & Applied Microbiology	3	MICRB 442 Laboratory in Proteins, Nucleic Acids, & Molecular Cloning	3
CAS 100 A, B, or C (GWS) Effective Speech	3	Arts (GA), Humanities (GH) or Social Behavioral Sciences (GS)	3
Health & Physical Activity (GHA)	1.5	Health & Physical Activity (GHA)	1.5
Total Credits:	16.5	Total Credits:	15.5
Semester 7	Credits	Semester 8	Credits
*MICRB ELECT	3	@MICRB ELECT	2-3
#MICRB ELECT	1	*MICRB ELECT	2-3
@MICRB ELECT	3-4	ENGL 202C (GWS) Technical Writing	3
BMB 400 Molecular Biology of the Gene	2	Arts (GA), Humanities (GH) or Social Behavioral Sciences (GS)	6
BMB 428 Physical Chemistry with Biological Applications	3	± LIST C FREE ELECTIVES	1-3
± LIST C FREE ELECTIVES	3		
Total Credits:	15-16	Total Credits:	15-16

- **Bold** type indicates courses requiring a quality grade of C or better.
- *Italic type* indicates courses that satisfy both major and General Education requirements.
- **Italic Bold** type indicates courses requiring a quality grade of C or better and that satisfy both major and General Education requirements.
- GWS, GHA, GQ, GN, GA, GH, and GS are codes used to identify General Education requirements.
- US, IL, and US;IL are codes used to designate courses that satisfy University United States/International Cultures requirement.
- W is the code used to designate courses that satisfy University Writing Across the Curriculum requirements.
- ~ indicates courses required to enter into this major.
- % indicates all 3 courses are required to graduate; a quality grade of C or better is required in 2 of the 3 courses.
- * indicates select 4 courses from: MICRB 401 (3), 410 (3), 412 (3), 415 (3), 450 (2)
- # indicates select 3 credits from: MICRB 422 (2), 447 (1), BMB 444, (1), 445W (2), 446 (1)
- @ indicates select 6-7 credits from: FdSc 408 (2), or any 400 level MICRB course except MICRB 400 and 496
- ± indicates see the Department List C for exclusions see reverse side
- To graduate, all students must earn a C or higher in 9 credits of any 400-level BMB/ MICRB courses except BMB 443W, 444, 445W, 446, BMB/MICRB 442, 496, MICRB 421W, 422, 447

Scheduling patterns for courses not taught each semester

Fall - only taught courses: BMB 251H, 400, 401H, 428, 430, 443W, 446, 464 BMB/MICRB 435, 450 MICRB 401, 413, 421W and MICRB/BIOTC 416

Spring - only taught courses: BMB 221, 252H, 402H, 433, 437, 444, 445W, 474, 497B BMB/MICRB 432, 460, 480 MICRB 201H, 412, 415, 422, 447

± **LIST C FREE ELECTIVES** - With the EXCEPTION of the courses listed below, ALL courses appearing in the University Bulletin are acceptable as elective courses: 6 credits of ROTC may be applied toward graduation requirements.

BI SC 001	BI SC 002	MATH 001	MATH 003	MATH 004	MATH 111	MATH 017
MATH 018	MATH 021	MATH 022	MATH 026	MATH 030	MATH 035	MATH 036
MATH 040	MATH 041	MATH 081	MATH 082	MATH 083	MATH 110	CHEM 001
CHEM 003	CHEM 108	CHEM 101	ENGL 004	ENGL 005	PH SC 007	PHYS 001
PHYS 150	PHYS 151	LL ED 005	LL ED 010	LL ED 123	STAT 100	