Recommended Academic Plan
Biotechnology Clinical Laboratory Science Option (BIOTC CLS at UP)
Effective Fall 2012 or 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 Principles***	3
~ ***CHEM 111 (GN) Experimental Chemistry***	1	*CHEM 113 (GN) Experimental Chemistry*	1
PSU 016 First-Year Seminar	1	% **MICRB 201 Introductory Microbiology**	3
Arts (GA), Humanities (GH) or Social Behavioral Sciences (GS)	3	MICRB 202 Introductory Microbiology Laboratory	2
^ ENGL 15 (30) Rhetoric and Composition (GWS)	3	^ CAS 100 A, B, or C (GWS) Effective Speech	3
Total Credits:	15	Total Credits:	16
Semester 3	**Credits**	**Semester 4**	**Credits**
CHEM 202 *(must be taken in sequence with CHEM 203)* or CHEM 210 Organic Chemistry *(must be taken in sequence with CHEM 212 & 213)*	3	CHEM 203 *(must be taken in sequence with CHEM 202)* or CHEM 212 Organic Chemistry CHEM 213 Laboratory in Organic Chemistry *(must be taken in sequence with CHEM 210 & 212)*	3 3 2
% **MICRB 251 Molecular & Cell Biology I**	3	% **MICRB 252 Molecular & Cell Biology II**	3
PHYS 250 (GN) Introduction Physics I	4	*PHYS 251 (GN) Introductory Physics II*	4
Arts (GA), Humanities (GH) or Social Behavioral Sciences (GS)	6	BIOL 322 Genetic Analysis	3
		Health & Physical Activity (GHA)	1.5
Total Credits:	16	Total Credits:	14.5 - 16.5
Semester 5	**Credits**	**Semester 6**	**Credits**
BMB 211 Elementary Biochemistry	3	BMB 221Applied Biochemistry	2
BMB 212 Elementary Biochemistry Laboratory	1	MICRB 412 Medical Microbiology	3
MICRB 410 Principles of Immunology	3	MICRB 422 Medical Microbiology Laboratory	2
MICRB 421W Laboratory of General & Applied Microbiology	3	ENGL 202C Technical Writing	3
Arts (GA), Humanities (GH) or Social Behavioral Sciences (GS)	6	± LIST C FREE ELECTIVES	1-3
Health & Physical Activity (GHA)	1.5	Arts (GA), Humanities (GH) or Social Behavioral Sciences (GS)	3
Total Credits:	17.5	Total Credits:	14-16
Semester 7	**Credits**	**Semester 8**	**Credits**
MICRB 405A Seminar & Practicum in Medical Technology	8	MICRB 405D Seminar & Practicum in Medical Technology	5
MICRB 405B Seminar & Practicum in Medical Technology	1	MICRB 405E Seminar & Practicum in Medical Technology	7
MICRB 405C Seminar & Practicum in Medical Technology	6	MICRB 405F Seminar & Practicum in Medical Technology	3
Total Credits:	15	Total Credits:	15

- **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 see the Department List for exclusions see reverse side.
- ^ indicates honor students should schedule ENGL/CAS 137H in the fall and ENGL/CAS 138T in the spring. The sequence should be completed in the first year.
- To graduate, all students must earn a C or higher in 9 credits of any 400-level BMB/ MICRB/BIOTC courses except BMB 442, 443W, 444, 445W, 446, 488, 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 BIOTC 489

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 BIOTC 459, 460

± **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	