



## RECOMMENDED COURSE OF STUDY FOR PRE-HEALTH CARE PROFESSION BIOTECHNOLOGY WITH A CHEMISTRY MINOR



- Students selecting this major who are interested in a pre-health care profession should be aware of the heavy course load each semester. The heavy course load could be alleviated by attending one or more summer school sessions.
- An overall 2.00 GPA is required for graduation.
- 128 hours total college credit with 48 hours at the 300 – 499 level is required for graduation.
- Marshall Plan requires 6 hours designated as International Elective, 3 hours designated as Writing Intensive course, and 3 hours designated as Multicultural.
- Students following this recommended curriculum should graduate within four academic years.

**Green highlighted courses are science block courses.**

YEAR ONE					
Fall Semester		Hours	Spring Semester		Hours
IST 160, Introduction to Programming		3	IST 241, Introduction to DNA Cloning		4
IST 131, Analytical II		4	IST 230, Analytical III		4
BSC 120, Principles of Biology I <sup>†††</sup>		4	BSC 121, Principles of Biology II <sup>†††</sup>		4
CHM 211, Principles of Chemistry I <sup>†††</sup>		3	CHM 212, Principles of Chemistry II <sup>†††</sup>		3
CHM 217, Principles of Chemistry I Lab		2	CHM 218, Principles of Chemistry II Lab		2
UNI 101/HON 101, New Student Seminar		1			
<b>Total</b>		<b>17</b>	<b>Total</b>		<b>17</b>
YEAR TWO					
Fall Semester		Hours	Spring Semester		Hours
IST 120, Connections I*		2	IST 220, Connections II		2
IST 231, Analytical Methods IV		4	IST 260, Instrumentation		3
CHM 355, Organic Chemistry I <sup>***</sup>		3	CHM 356, Organic Chemistry II <sup>***</sup>		3
PHY 201, General Physics I <sup>***</sup>		3	CHM 361, Organic Chemistry Lab <sup>***</sup>		3
PHY 202, General Physics I Lab <sup>***</sup>		1	PHY 203, General Physics I <sup>***</sup>		3
ENG 101, English Composition I*		3	PHY 204, General Physics I Lab <sup>***</sup>		1
<b>Total</b>		<b>16</b>	ENG 102, English Composition II*		3
			<b>Total</b>		<b>18</b>
YEAR THREE					
Fall Semester		Hours	Spring Semester		Hours
IST 340, Issues in DNA Technology		4	IST 301, Public Service		1
IST 342, Bioscience Research Methods		2	IST 341, Issues in Human Genetics		4
300 – 499 IST Biotech Elective\$\$\$		4	300 – 499 IST Biotech Elective\$\$\$		3
BSC 365, Biochemistry <sup>***</sup>		3	BSC 322, Cell Biology <sup>***</sup>		4
Foreign Language <sup>††</sup>		3	International Social Science Elective\$		3
Multicultural Social Science Elective\$		3	Foreign Language <sup>††</sup>		3
<b>Professional Exam†</b>			<b>Professional Exam†</b>		
<b>Total</b>		<b>19</b>	<b>Total</b>		<b>18</b>
YEAR FOUR					
Fall Semester		Hours	Spring Semester		Hours
IST 490, Senior Project I		3	IST 491, Senior Project II		3
300 – 499 IST Biotech Elective\$\$\$		4	300 – 499 IST Biotech Elective\$\$\$		4
Fine Arts Elective <sup>**</sup>		3	CMM 103, Fundamentals of Communication		3
Writing Intensive Literature Elective <sup>†</sup>		3	Humanities Elective <sup>††</sup>		3
International Social Science Elective\$		3	Foreign Language <sup>††</sup>		3
Foreign Language <sup>††</sup>		3	<b>Total</b>		<b>16</b>
<b>Professional Exam†</b>					
<b>Total</b>		<b>19</b>			
<b>TOTAL HOURS – 138 – 141 (48 300 – 499 level credit hours)</b>					

\*IST 101 may substitute for ENG 101 and IST 102 may substitute for ENG 201.

†††A grade of "C" or better is required.

\$Students are required to complete 9 credit hours in Social Sciences from at least 3 different fields: Anthropology – any course; Criminal Justice – any course; Economics – any course; Geography – any course *except* 101, 425, 429, and 430; History – any course; Political Science – any course; Psychology – any course *except* 223 or 417; Sociology – any course *except* 344, 345, 445; or Women's Studies 101. PSY 201 and SOC 200 are recommended for Pre-Health majors.

†Students are required to complete 3 hours in Literature: Classics 230, 231, 232, 233, 234, 235, or 236; English – any 300 – 499 level course in literature only; French 317, 318, 401, 402, 403, or 404; German 301, 302, 417, or 418; Latin – any 300 – 499 level course; Religious Studies 304, 310, 320, 325, or 351; or Spanish 411, 412, 413, 414, 415, or 416.

\*\*Students are required to complete 3 hours in Fine Arts: ART 112, MUS 142, THE 112 or other Fine Arts course.

††Choose one of the following series ending: FRN 203 and 204, or GER 203 and 204, JPN 203 and 204, or SPN 203 and 204, or another modern language. Depending on high school background, this will require 3 – 12 hours at the college level. Students are encouraged to meet this requirement through enrollment in a language study program, offered either by Marshall or another institution that includes intensive work in a modern foreign language.

†††Students are required to complete 3 credit hours in Humanities: Classics – any course *except* 230, 231, 232, 233, 234, 235, or 236, Philosophy – any course; or Religious Studies – any course *except* 304, 310, 320, 325, or 351.

\$\$\$15 – 20 credit hours are required depending on course selection. Please see Faculty Advisor for selection choices.

†It is best to take the professional exam in the spring of the junior year prior to the year of first enrollment in the professional school. If necessary, student may be able to *retake* the professional exam in the fall semester of the senior year. An individual may take the MCAT only three times. In a few cases the student, after discussions with his/her advisor, may choose to take the professional exam during the spring semester of the sophomore year to apply for early entrance. Professional exams are AHPAT – Allied Health Professions Admission Test for Physical Therapy Schools; DAT – Dental Admissions Testing for Dentistry School; GRE – Graduate Record Exam for Physician Assistant School, Podiatry School, or Veterinary Medicine; MCAT – Medical College Admission Testing for Medical School or Podiatry School; OAT – Optometry Admission Testing for Optometry School; PCAT – Pharmacy College Admission Test for Pharmacy School; and VCAT – Veterinary College Admission Test for Veterinary Schools. Consult the professional school(s) of your choice to determine which professional exam is required.

\*\*\*These are appropriate technical electives for both the Biotechnology Major and Pre-Professional school.