









2019-2020 Pre-Professional Health Program Course Recommendations

Recommendations are based on regional scans of professional health programs' pre-requisites and standardized test recommendations. Courses are also included that have been completed by competitive, successful applicants. **Strongly recommended** and **recommended** courses are more likely to vary by professional program. Students should check admissions requirements and recommendations of individual professional programs to assure completion of pre-requisites.

Biology, Chemistry, Physics, and Mathematics Course Recommendations

Program Level:	Doctoral						Doctoral/Masters	Masters
	DENTISTRY (DMD, DDS)  jmu.edu/pre-dent	MEDICINE (MD, DO, DPM, DC, ND)  jmu.edu/pre-med	OPTOMETRY (OD)  jmu.edu/pre-optometry	PHARMACY (PHARM D)  jmu.edu/pre-pharm	PHYSICAL THERAPY (DPT)  jmu.edu/pre-pt	VETERINARY MEDICINE (DVM)  jmu.edu/pre-vet	OCCUPATIONAL THERAPY (OTD/MSOT)  jmu.edu/pre-ot	PHYSICIAN ASSISTANT (MPAS)  jmu.edu/pre-pa
BIOLOGY	Foundations I-II BIO 140 BIO 150 ≥ 16 credits <u>Strongly Recommended</u> Microbiology (245) ^{FSp} Human Anatomy (290) Animal Physiology (370) ^{FSp} <u>Recommended</u> Genetics (240) ^{FSp} Cell & Molec. Bio (304) ^{Sp} Histology (482) ^{Sp}	Foundations I-II BIO 140 BIO 150 ≥ 12 credits <u>Strongly Recommended</u> Genetics (240) ^{FSp} Microbiology (245) ^{FSp} Cell & Molec. Bio (304) ^{Sp} Animal Physiology (370) ^{FSp}	Foundations I-II BIO 140 BIO 150 Human Physiology and Anatomy BIO 270 BIO 290 Microbiology BIO 245 ≥ 4 credits <u>Strongly Recommended</u> Genetics (240) ^{FSp} Cell & Molec. Bio (304) ^{Sp} Immunology (343) ^{FSp} Histology (482) ^{Sp}	Foundations I-II BIO 140 BIO 150 Human Physiology and Anatomy BIO 270 BIO 290 Microbiology BIO 245 ≥ 4 credits <u>Strongly Recommended</u> Genetics (240) ^{FSp} Cell & Molec. Bio (304) ^{Sp} Immunology (343) ^{FSp} Molecular Biology (480) ^{FSp}	Foundations I-II BIO 140 BIO 150 Human Physiology and Anatomy BIO 270*** BIO 290*** Microbiology BIO 245	Foundations I-II BIO 140 BIO 150 Genetics BIO 240 Microbiology BIO 245 ≥ 13 credits <u>Strongly Recommended</u> Cell & Molec. Bio (304) ^{Sp} Comp. Anatomy (320) ^{Sp} Animal Physiology (370) ^{FSp} <u>Recommended</u> Immunology (343) ^{FSp} Med. Parasitology (420) ^{FSp} Molecular Biology (480) ^{FSp} Histology (482) ^{Sp}	<u>Recommended</u> Additional ≥ 3 credits of Introductory Biology, e.g.: <u>Recommend:</u> Foundations I (140) <u>Additional Option:</u> Contemporary (103) Human Physiology and Anatomy BIO 270*** BIO 290***	Foundations I-II BIO 140 BIO 150 Human Physiology and Anatomy BIO 270*** BIO 290*** Microbiology BIO 245 ≥ 4 credits <u>Strongly Recommended</u> Genetics (240) ^{FSp} <u>Recommended</u> Cell & Molec. Bio (304) ^{Sp} Immunology (343) ^{FSp} Histology (482) ^{Sp}
CHEMISTRY	General Chem I-II CHEM 131 & 131L CHEM 132 & 132L Organic Chem I-II CHEM 241 ^{Fsu} CHEM 242 & 242L ^{SpSu} Biochemistry CHEM 361 ^{FSp}	General Chem I-II CHEM 131 & 131L CHEM 132 & 132L Organic Chem I-II CHEM 241 ^{Fsu} CHEM 242 & 242L ^{SpSu} Biochemistry CHEM 361 ^{FSp}	General Chem I-II CHEM 131 & 131L CHEM 132 & 132L Organic Chem I-II CHEM 241 ^{Fsu} CHEM 242 & 242L ^{SpSu} Biochemistry CHEM 361 ^{FSp}	General Chem I-II CHEM 131 & 131L CHEM 132 & 132L Organic Chem I-II CHEM 241 ^{Fsu} CHEM 242 & 242L ^{SpSu} Biochemistry CHEM 361 ^{FSp} (366L ^{Sp} recommended)	General Chem I-II CHEM 131 & 131L CHEM 132 & 132L Organic Chem I-II CHEM 241 ^{Fsu} CHEM 242 & 242L ^{SpSu} Biochemistry CHEM 361 ^{FSp} (366L ^{Sp} recommended)	General Chem I-II CHEM 131 & 131L CHEM 132 & 132L Organic Chem I-II CHEM 241 ^{Fsu} CHEM 242 & 242L ^{SpSu} Biochemistry CHEM 361 ^{FSp} (366L ^{Sp} recommended)	<u>Chemistry Pre-Req for Human Physiology</u> CHEM 120 or CHEM 131 & 131L	General Chem I-II CHEM 131 & 131L CHEM 132 & 132L Organic Chem I CHEM 241 ^{Fsu} , and 241L ^{Fsu} or 242L ^{SpSu} Biochemistry CHEM 260 ^{Sp} & 260L ^{Sp} , or CHEM 361 ^{FSp}
PHYSICS	College Physics I-II PHYS 140 & 140L ^{Fsu} PHYS 150 & 150L ^{SpSu}	College Physics I-II PHYS 140 & 140L ^{Fsu} PHYS 150 & 150L ^{SpSu}	College Physics I-II PHYS 140 & 140L ^{Fsu} PHYS 150 & 150L ^{SpSu}	College Physics I-II PHYS 140 & 140L ^{Fsu} PHYS 150 & 150L ^{SpSu}	College Physics I-II PHYS 140 & 140L ^{Fsu} PHYS 150 & 150L ^{SpSu}	College Physics I-II PHYS 140 & 140L ^{Fsu} PHYS 150 & 150L ^{SpSu}	College Physics I PHYS 140 & 140L ^{Fsu} Some OT Programs, may allow HTH 441/KIN 407 ^{FSp**} as a substitute	
MATH	Mathematics 6 credits <u>Strongly Recommended</u> 3 credits of Statistics 3-4 credits of Calculus	Statistics 3 credits, e.g.: MATH 220 or MATH 229 Calculus 3-4 credits, e.g.: MATH 205, 231, 233, or 235	Statistics 3 credits, e.g.: MATH 220 or MATH 229 Calculus 3-4 credits, e.g.: MATH 205, 231, 233, or 235	Statistics 3 credits, e.g.: MATH 220 or MATH 229 Calculus 3-4 credits, e.g.: MATH 231, 233, or 235	Statistics 3 credits, e.g.: MATH 220 or MATH 229 <u>Recommended</u> Calculus, e.g. MATH 205, 231, 233, or 235	Statistics 3 credits, e.g.: MATH 220 or MATH 229 Calculus 3-4 credits, e.g.: MATH 205, 231, 233, or 235	Statistics 3 credits, e.g.: MATH 220 or MATH 229	Statistics 3 credits, e.g.: MATH 220 or MATH 229 <u>Recommended</u> 3 additional credits of Mathematics

Additional Course Recommendations

	DENTISTRY	MEDICINE	OPTOMETRY	PHARMACY	PHYSICAL THERAPY	VETERINARY MEDICINE	OCCUPATIONAL THERAPY	PHYSICIAN ASSISTANT
SOCIAL AND BEHAVIORAL SCIENCES	<p>≥ 3 credits <u>Strongly Recommended</u> ≥ 3 credits of SOCI and PSYC, e.g.: Social Issues in a Global Context (SOCI 110) Microsociology (SOCI 140) General Psychology (PSYC 101) Life Span Human Development (PSYC 160)</p>	<p>Psychology ≥ 3 credits of PSYC, e.g.: General Psychology (101) Life Span Human Development (160) Sociology ≥ 3 credits of SOCI, e.g.: Social Issues in a Global Context (110) Microsociology (140) ≥ 3 credits of PSYC, SOCI, or ANTH: <u>Strongly Recommended</u> Health Psychology (PSYC 308^P; pre-req 101) Medical Sociology (SOCI 375^P) Sociology of Mental Health & Illness (SOCI 385^P) Medical Anthropology (ANTH 360^P; pre-req 195)</p>	<p>Psychology General Psychology (101)</p>	<p>Psychology 3 credits of PSYC, e.g.: <u>Recommended:</u> General Psychology (101) <u>Additional Option:</u> Life Span Human Development (160) Sociology 3 credits of Introductory SOCI, e.g.: Social Issues in a Global Context (SOCI 110) Microsociology (SOCI 140)</p>	<p>Psychology ≥ 6 of the following: General Psychology (101) Life Span Human Development (160) Abnormal Psychology (250 or 335**) <u>GenEd Recommendation</u> Social Issues in a Global Context (SOCI 110)</p>	<p><u>GenEd Recommendation</u> General Psychology (PSYC 101)</p>	<p>Psychology General Psychology (101) Life Span Human Development (160) Abnormal Psychology (250 or 335**) Sociology 3 credits of Introductory SOCI, e.g.: Social Issues in a Global Context (110) Microsociology (140) Anthropology Cultural Anthropology (ANTH 195)</p>	<p>Psychology ≥ 6 credits of PSYC from following options – check specific school prereqs: General Psychology (101) Life Span Human Development (160) Abnormal Psychology (250 or 335**)</p>
ENGLISH AND COMMUNICATION	<p>Writing WRTC 103 Literature 3 credits: Any English (ENG) Great Works (HUM 200)</p>	<p>Writing WRTC 103 Literature 3 credits: Any English (ENG) Great Works (HUM 200)</p>	<p>Writing WRTC 103 Literature 3 credits: Any English (ENG) Great Works (HUM 200)</p>	<p>Writing WRTC 103 Literature 3 credits: Any English (ENG) Great Works (HUM 200) Communication 3 credits of Public Speaking, e.g.: Presentations (SCOM 121) Individual (SCOM 122) Group (SCOM 123)</p>	<p>Writing WRTC 103 Literature 3 credits: Any English (ENG) Great Works (HUM 200)</p>	<p>Writing WRTC 103 Literature 3 credits: Any English (ENG) Great Works (HUM 200) <u>Recommended</u> 3 credits of Public Speaking, e.g.: Presentations (SCOM 121) Individual (SCOM 122) Group (SCOM 123)</p>	<p>Writing WRTC 103 Literature 3 credits: Any English (ENG) Great Works (HUM 200)</p>	
OTHER		<p><u>MCAT-Prep Recommendation</u> Critical Thinking (PHIL 120)</p>		<p>Economics ≥ 3 credits of ECON: <u>Recommended:</u> Microeconomics (201) <u>Additional Option:</u> Macroeconomics (200)</p>	<p>≥ 3 credits Exercise Physiology (KIN 302**FSp) Medical Terminology (HTH 210*FSp) <u>Recommended</u> Biomechanics, e.g.: HTH 441/ KIN407**FSp KIN 306**FSp, or BIO 490^P</p>		<p>Medical Terminology HTH 210*FSp <u>Recommended</u> 3 credits of Ethics, e.g.: Ethical Reasoning (PHIL 150)</p>	<p>Medical Terminology HTH 210*FSp</p>

^F Course traditionally only offered in Fall Semester

^{Sp} Course traditionally only offered in Spring Semester

^{FSp} Course traditionally only offered in Fall and Spring Semester

^{Fsu} Course traditionally only offered in Fall Semester and a Summer Session

^{SpSu} Course traditionally only offered in Spring Semester and a Summer Session

^P Periodically offered by the department

* Declaration of Pre-Professional Health (PPH) minor does not give enrollment access for class during advanced registration; PPH minor given enrollment access during open enrollment.

** Declaration of Pre-Professional Health (PPH) minor does not give access to course; declaration in select major and minor programs are required. Shown to decrease confusion among students in majors taking equivalent courses.

*** Admissions committees place a heavy emphasis on these courses within Biology. Students are encouraged to take math and 100-level Biology courses first, and students are *strongly* encouraged to take at a 4-year institution.

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2/2