

Checklist for B.S. in Biomedical Science, option in Medical Laboratory Science

12/8/16

University Discovery and Inquiry Requirements			
Course		Semester	Credits Grade
Writing Skills	ENGL 401 (WI) First-Year Writing		4
Quant. Reasoning	Statistics		4
Biological Science	BMS 507 Human A & P or BIOL 411 Intro. Biology: Molecular and Cellular		4
Physical Science	CHEM 403 General Chemistry I	Fall	4
Environment, Technology & Society	BMS 650 Molecular Diagnostics	Fall	4
Fine & Performing Arts			
Historical Perspectives			
Humanities			
Social Science			
World Cultures			
Capstone ¹			
Inquiry course Any Discovery inquiry course including BIOL 411 - Introductory Biology			

University Writing Intensive Requirements			
Course		Semester	Credits Grade
ENGL 401	First-Year Writing		4
Course in major	BMS 610, BMS 716, BMS 718, BMS 730 or BMS 750		
600/700-level course			
Elective course			

Foundation Courses			
Course		Semester	Credits Grade
CHEM 403	- General Chemistry I	Fall	4
CHEM 404	- General Chemistry II	Spring	4
CHEM 545/546	- Organic Chemistry/Lab ²		3 /2
Statistics (BIOL 528, PSYC 402, SOC 502, or MATH 439)			4

Bioscience Core Courses			
Course		Semester	Credits Grade
BMS 503	General Microbiology or BMS 501 Microbes Human Disease		5 or 4
BMS 507	Human Anatomy and Physiology I or BIOL 411 Intro. Biology: Molecular and Cellular		4
BMS 508	Human Anatomy and Physiology II	Spring	4
BMCB 658/659	General Biochemistry/Lab		3/2
GEN 604	Principles of Genetics		4

BMS-MLS Core Courses			
Course		Semester	Credits Grade
BMS 401	Professional Perspectives in Biomedical Sciences (required for first-year students only)	Fall	1
BMS 560/561	Body Fluids/Lab	Spring	3/1
BMS 602/603	Pathogenic Microbiology/Lab	Spring	3/2
BMS 642/643	Clinical Immunology and Serology/ Clinical Serology Lab	Spring	3/1
BMS 650	Molecular Diagnostics	Fall/Spring	4
BMS 720	Mycology, Parasitology, & Virology ³	Spring	3

Major Elective Courses - five courses total - see next page			
A) One course that is Writing Intensive (WI)	Semester	Credits	Grade
B) Two courses with a lab (L)			
C) One Capstone course			
D) One additional course			

A total of 128 credits needed for graduation. A grade of C- or better required in all BMS-MLS Core Courses.

¹ Capstone experiences include research projects (BMS 795 or INCO 790), teaching assistant experience (BMS 790), Case Studies (BMS 750), senior thesis (BMS 799 or 799H), internships or other approved experiences. Capstone experiences usually occur in the final year but may be completed during the previous summer if the student has completed 90 credits. (see <https://www.unh.edu/discovery/discovery-program-capstone-experience>)

² Students applying to health profession schools need a full year of English, a full year of Introductory Biology, and a full year of Organic Chemistry. ENGL 502 or 503 should be taken in addition to ENGL 401; CHEM 651/653 and CHEM 652/654 should be taken in place of CHEM 545/546. See <http://www.unh.edu/premed-advising/curric.htm>

³ If students take BMS 721- MPV lab concurrently with BMS 720 MPV, BMS 721 can count as one of the 2 electives with labs in section B. In that case, students select an additional non-lab course in section D (for a total of 2) to complete their 5 major elective courses.

Major elective courses for Medical Laboratory Science

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Course number	Course Name	Semester	Credits	Attributes ⁴
BMS 610	Biomedical Lab Management	Fall	4	WI
BMS 623	Histology:Micro.Cell Structure & Function	Spring	4	L
BMS 635	Preceptorial in Prehospital Care	Fall/Spring	2	C
BMS 640	Phlebotomy Theory	Spring	2	
BMS 641	Phlebotomy Clinical Internship	All	1 or 2	
BMS 644/645	Hematology/Clinical Hematology	Fall	3/3	L
BMS 656/657	Immunohematology/Blood Banking	Fall	3/1	L
BMS 658/659	Medical Biochemistry/Clinical Chemistry Lab	Spring	3/2	L
BMS 702	Endocrinology	Fall	4	
BMS 703	Infectious Disease and Health	Fall	4	
BMS 704	Pathologic Basis of Disease	Spring	4	
BMS 705/715	Immunology/Lab	Fall	3/2	L
BMS 706/708	Virology/Lab	Spring	3/2	L
BMS 711	Toxicology	Spring	4	
BMS 712	Grand Rounds	Fall & Spring	2	
BMS 716	Public Health:Food & Waterborne Diseases	Fall	4	WI,C
BMS 718	Mammalian Physiology	Spring	4	WI
BMS 719	Host-Microbe Interactions	Fall	4	C
BMS 730	Ethical Issues in Biomedical Science	Spring	4	WI
BMS 740	Human Microbiome	Spring	4	L,C
BMS 750	Case Studies	Fall	variable	WI,C
BMCB 753	Cell Culture	Fall	5	L
BMCB 760	Pharmacology	Spring	4	
BMCB 763	Biochemistry of Cancer	Fall	4	
GEN 706	Human Genetics	Spring	4	
BMS 751	Adv. Clin. Micro. Internship		5	C
BMS 752	Adv. Hematology Internship		5	C
BMS 753	Adv. Immunohematology Internship		5	C
BMS 754	Adv. Clin. Chemistry Intern.		5	C
BMS 761	Clin. Microbiology Internship		20	C
BMS 762	Clin. Hematology Internship		20	C
BMS 763	Clin. Immunohematology Internship		20	C
BMS 764	Clin. Chemistry Internship		20	C
BMS 790	Undergraduate Teaching Experience ⁵		variable	C
BMS 795	Investigations		variable	C
BMS 796	Biomedical Research Internship		variable	C
BMS 799	Senior Thesis		variable	C

⁴ WI = writing intensive; L = laboratory course; C = capstone

⁵ To be a capstone, student must TA for 2 semesters and participate in lab presentation/instruction.

Sample Course Sequence for Medical Laboratory Science option in Biomedical Science

	Fall	Spring
1st Year	BMS 401 - Intro to Biomedical Science BIOL 507 - Anatomy and Physiology I ENGL 401 - First-Year Writing CHEM 403 - General Chemistry I Discovery Course ⁶	BMS 508 - Anatomy and Physiology II Statistics ⁷ CHEM 404 - General Chemistry II Discovery Course ⁶ (Inquiry and/or WI)
2nd Year	BMS 503 - General Microbiology GEN 604 - Principles of Genetics Discovery Course ⁶ Discovery Course ⁶ (Inquiry and/or WI)	BMS 602 - Pathogenic Microbiology/Lab ⁸ BMS 560/561 - Body Fluids ⁸ CHEM 545/546 - Organic Chemistry/Lab Major Elective (<i>BMS 640/641 Phlebotomy Theory/Internship</i>) ⁹
3rd Year	Major Elective with lab - (<i>BMS 644/645 - Hematology</i> ⁹) BMCB 658/659 - General Biochem/Lab BMS 650 - Molecular Diagnostics ⁸	BMS 642/643 - Clin. Immunology & Serology/Lab ⁸ BMS 720 - Mycology, Parasitology & Virology ⁸ (<i>BMS 721 MPV lab</i> ⁹) Major elective with lab or 2 non-lab major elect. - (<i>BMS 658/659 - Medical Biochemistry/Lab</i> ⁹)
4th Year	Elective or Major elective with lab (if necessary) (<i>BMS 656/657- Immunohematology</i> ⁹) Major Elective WI - (<i>BMS 610 - Lab Management</i> ⁹) Major Elective capstone (<i>BMS 750 - Case Studies</i> ⁹) Discovery Course ⁶	Elective Elective Elective Elective (<i>BMS 751-754 Clinical Internship</i>)

⁶ Discovery categories to select from: Historical Perspectives (HP), World Cultures (WC), Social Science (SS), Humanities (HUMA), Fine and Performing Arts (FPA)

⁷ Statistics courses: BIOL 528, PSYC 402, SOC 502, MATH 439

⁸ Core BMS courses required of all MLS option students

⁹ Courses required for student interested in participating in an MLS clinical generalist internship