



Department of Clinical Laboratory Sciences MLT to MLS Career Ladder Curriculum

Fall Semester Year 1	Hours	Spring Semester Year 1	Hours
English 101, English Composition I**	3	SOC 200 Intro. Sociology (SS, MC, WI Sullivan)**	3
MTH 127 or 130**	3 or 4	CHM 212, Principles of Chemistry II	3
CHM 211, Principles of Chemistry I**	3	CHM 218, Principles of Chemistry II Lab	2
CHM 217, Principles of Chemistry I Lab**	2	Freshmen Seminar or CMM 103 **	3
CLS 105CT, Medical Laboratory Terminology**	3	****see notes below	
Freshmen Seminar or CMM 103**	3		
Total Hours	17-18	Total Hours	11
Fall Semester Year 2	Hours	Spring Semester Year 2	Hours
English 201, English Composition II **	3	BSC 228, Human Physiology	4
CLS 200, Clinical Chemistry	4	CLS 210, Clinical Immunohematology	4
CLS 230, Clinical Hematology	4	CLS 220, Clinical Microbiology	4
BSC 227, Human Anatomy	4	CLS 255, Clinical Laboratory Problems	3
Total Hours	15	Total Hours	15
15 Week Hospital Based Clinical Practicum Sequence – Summer or Fall Semester			
CLS 270 Clinical Practicum Hematology	3	CLS 272 Clinical Practicum Blood Bank	3
CLS 271 Clinical Practicum Clinical Chemistry	3	CLS 273 Clinical Practicum Microbiology	3
Practicum Total Hours			12
Associate Degree in Medical Laboratory Technology earned after successful completion of clinical practicum 72-73 total credit hours			
Additional Career Ladder Coursework for BS in Medical Laboratory Science			
Fall Semester Year 3	Hours	Spring Semester Year 3	Hours
CHM 254 or 327 Introduction to Organic Chem **	3	STA (previously MTH) 225, Statistics	3
ECN 200 ,250 or MGT 320 Economics	3	MLS Research/Mgt. Elective***	3
MLS Science Elective***	3	CLS 310 Clinical Immun. And Mol. Diag. (WI)**	3
Humanities Elective**	3	Fine Arts Elective**	3
Total Hours	12	Total Hours	12
Fall Semester Year 4	Hours	Spring Semester Year 4	Hours
CLS 400 Advanced Clinical Chemistry	2	CLS 466 Diagnostic Physiology	2
CLS 410 Advanced Immunohematology	2	CLS 468 Senior Research/Capstone**	2
CLS 420 Advanced Clinical Microbiology	2	CLS 472 Advanced Clinical Practicum I	3
CLS 430 Advanced Hematology	2	CLS 473 Advanced Clinical Practicum II	3
CLS 460 Laboratory Mgt. and Education	3	CLS 464 Laboratory Instrumentation	3
CLS 499 Seminar in Laboratory Medicine	2		
Total Hours	13	Total Hours	13
All CLS 300 and 400 level courses offered through online course delivery **BS in Medical Laboratory Science = 122-124 total credit hours			

**Courses to meet Marshall University Core Curriculum requirements

**Online CHM 254 or 327 is only offered in the fall semesters; please plan coursework accordingly

***These electives are specific for the MLS major, and students must choose 1 science and 1 research/management elective from these specific courses (course offering times vary):

MLS science electives: CHM 345 Analytical Chemistry, CHM 365 Biochemistry, any upper division BSC 300/400 level course, PH 475 Communicable and Non-communicable Diseases, and PH 105 Epidemiology

MLS Research/Management electives: HP 320 Introduction to Research in Health Professions, HP 420 Allied Health Administration, or PH 270 Global Health

***The credit hours for this semester could be higher depending on ACT scores of students below 21, which would mean additional chemistry requirement of CHM 111 before taking CHM 211