MEDICAL LABORATORY SCIENCE - B.S.

College of Arts and Sciences
Department of Biological Sciences
www.kent.edu/biology

Examples of Possible Careers*

Clinical laboratory technologists and technicians

- 7.3% faster than the average
- 337,800 number of jobs
- $54,180 potential earnings

Health specialties teachers, postsecondary

- 20.5% much faster than the average
- 254,000 number of jobs
- $99,090 potential earnings

Contact Information

- Program Coordinator: **Chi-hua Groff** | cchiu5@kent.edu | 330-672-5972
- Speak with an Advisor
- Chat with an Admissions Counselor

Fully Offered

- **Delivery:**
  - In person
- **Location:**
  - Kent Campus

***Note**
Source of occupation titles and labor data is from the U.S. Bureau of Labor Statistics' Occupational Outlook Handbook. Data comprises projected percent change in employment over the next 10 years; nation-wide employment numbers; and the yearly median wage at which half of the workers in the occupation earned more than that amount and half earned less.

Description

The Bachelor of Science degree in Medical Laboratory Science allows students to combine three years of study at Kent State with 12 months of professional training at an approved hospital. Medical laboratory scientists are trained to perform complex chemical, microscopic and microbiological procedures. Graduates are eligible to sit for the Board of Registry of the American Society of Clinical Pathologists Exam.

Admission Requirements

The university affirmatively strives to provide educational opportunities and access to students with varied backgrounds, those with special talents and adult students who graduated from high school three or more years ago.

First-Year Students on the Kent Campus: First-year admission policy on the Kent Campus is selective. Admission decisions are based upon cumulative grade point average, strength of high school college preparatory curriculum and grade trends. Students not admissible to the Kent Campus may be administratively referred to one of the seven regional campus to begin their college coursework. For more information, visit the admissions website for first-year students.

First-Year Students on the Regional Campuses: First-year admission to Kent State's campuses at Ashtabula, East Liverpool, Geauga, Salem, Stark, Trumbull and Tuscarawas, as well as the Twinsburg Academic Center, is open to anyone with a high school diploma or its equivalent. Check with a regional campus admissions office to determine application requirements, as they may differ among campuses.

International Students: All international students must provide proof of English language proficiency (unless they meet specific exceptions) by earning a minimum 525 TOEFL score (71 on the Internet-based version), minimum 75 MELAB score, minimum 6.0 IELTS score, minimum 48 PTE score or minimum 100 DET score; or by completing the ESL level 112 Intensive Program. For more information, visit the admissions website for international students.

Transfer Students: For more information, visit the admissions website for transfer students.

Former Students: Former Kent State students or graduates who have not attended another college or university since Kent State may complete the reenrollment or reinstatement form on the University Registrar's website.

Program Learning Outcomes

Graduates of this program will be able to:

1. Be certified as professional medical laboratory scientists.
2. Perform assays of clinical samples in a hospital or laboratory setting.
3. Demonstrate an understanding of human physiology and familiarity with human health issues.
4. Interpret chemical and molecular data for clinical diagnosis.

Professional Licensure Disclosure

This program is designed to prepare students to sit for applicable licensure or certification in Ohio. If you plan to pursue licensure or certification in a state other than Ohio, please review state educational requirements for licensure or certification and contact information for state licensing boards at Kent State's website for professional licensure disclosure.

University Requirements

All students in a bachelor's degree program at Kent State University must complete the following university requirements for graduation.

NOTE: University requirements may be fulfilled in this program by specific course requirements. Please see Program Requirements for details.

Destination Kent State: First Year Experience	1
Course is not required for students with 25 transfer credits, excluding College Credit Plus, or age 21+ at time of admission.	
Diversity Domestic/Global (DIVD/DIVG)	2 courses
Students must successfully complete one domestic and one global course, of which one must be from the Kent Core.	
Experiential Learning Requirement (ELR)	varies
Students must successfully complete one course or approved experience.	

Kent Core (see table below)	36-37
Writing-Intensive Course (WIC)	1 course
Students must earn a minimum C grade in the course.	
Upper-Division Requirement	39
Students must successfully complete 39 upper-division (numbered 30000 to 49999) credit hours to graduate.	
Total Credit Hour Requirement	120

Kent Core Requirements

Kent Core Composition (KCMP)	6
Kent Core Mathematics and Critical Reasoning (KMCR)	3
Kent Core Humanities and Fine Arts (KHUM/KFA) (min one course each)	9
Kent Core Social Sciences (KSS) (must be from two disciplines)	6
Kent Core Basic Sciences (KBS/KLAB) (must include one laboratory)	6-7
Kent Core Additional (KADL)	6
Total Credit Hours:	**36-37**

Program Requirements

Major Requirements

Code	Title	Credit Hours
Major Requirements (courses count in major GPA)		
BSCI 10110	BIOLOGICAL DIVERSITY (ELR) (KBS) (KLAB)	4
BSCI 10120	BIOLOGICAL FOUNDATIONS (ELR) (KBS) (KLAB)	4
BSCI 30130	HUMAN PHYSIOLOGY	3
BSCI 30050	HUMAN GENETICS	3
BSCI 30140	CELL BIOLOGY	4
BSCI 30171	GENERAL MICROBIOLOGY	4
BSCI 40174	IMMUNOLOGY	3
BSCI 40581	ANIMAL PARASITOLOGY	4
CHEM 10060	GENERAL CHEMISTRY I (KBS)	4
CHEM 10061	GENERAL CHEMISTRY II (KBS)	4
CHEM 10062	GENERAL CHEMISTRY I LABORATORY (KBS) (KLAB)	1
CHEM 10063	GENERAL CHEMISTRY II LABORATORY (KBS) (KLAB)	1
CHEM 20481	BASIC ORGANIC CHEMISTRY I	4
CHEM 30105	ANALYTICAL CHEMISTRY I	3
CHEM 30107	ANALYTICAL CHEMISTRY LABORATORY I (WIC) (min C grade) [1]	1
CHEM 30284	INTRODUCTORY BIOLOGICAL CHEMISTRY	4
CHEM 30301	INORGANIC CHEMISTRY I	2
CLS 49010	CLINICAL MICROBIOLOGY: THEORY [2]	4
CLS 49011	CLINICAL MICROBIOLOGY: APPLICATIONS	4
CLS 49012	CLINICAL IMMUNOLOGY: THEORY	1
CLS 49013	CLINICAL IMMUNOLOGY: APPLICATIONS	1
CLS 49014	CLINICAL MYCOLOGY: THEORY AND APPLICATIONS	1
CLS 49015	CLINICAL PARASITOLOGY: THEORY AND APPLICATIONS	1
CLS 49020	CLINICAL CHEMISTRY: THEORY	4
CLS 49021	CLINICAL CHEMISTRY: APPLICATIONS	3
CLS 49022	URINALYSIS: THEORY	1
CLS 49023	URINALYSIS: APPLICATIONS	1
CLS 49030	IMMUNOHEMATOLOGY: THEORY	2
CLS 49031	IMMUNOHEMATOLOGY: APPLICATIONS	2
CLS 49032	COAGULATION: THEORY AND APPLICATIONS	1
CLS 49033	CLINICAL HEMATOLOGY: THEORY	2
CLS 49034	CLINICAL HEMATOLOGY: APPLICATIONS	2
CLS 49040	TOPICS IN LABORATORY MANAGEMENT	1
CS 10062	PROGRAMMING FOR PROBLEM SOLVING IN SCIENCES	3-4
or EMAT 15310	CREATIVE CODING	
MATH 11010	ALGEBRA FOR CALCULUS (KMCR)	3
MATH 11022	TRIGONOMETRY (KMCR)	3
MATH 30011	BASIC PROBABILITY AND STATISTICS	3
Additional Requirements (courses do not count in major GPA)		
UC 10097	DESTINATION KENT STATE: FIRST YEAR EXPERIENCE	1
Kent Core Composition		6
Kent Core Humanities and Fine Arts (minimum one course from each)		9
Kent Core Social Sciences (must be from two disciplines)		6
Kent Core Additional (courses must be from Social Sciences category)		3
Minimum Total Credit Hours:		**121**

1 A minimum C grade must be earned to fulfill the writing-intensive requirement.

2 Students who complete the required in-hospital clinical experience fulfill the experiential learning requirement.

Graduation Requirements

Minimum Major GPA	Minimum Overall GPA
2.000	2.000

- Students are expected to consult with a medical technology advisor before registering for courses each semester.
- The fourth year clinical training is NOT guaranteed, but it is required to graduate with this major. Acceptance to clinical training is at the discretion of the clinical affiliates, is highly competitive and is based on multiple criteria. Typically, clinical affiliates will interview students with a minimum 3.000 major GPA and hospital experience.
- Students declared in the Medical Laboratory Science major are not required to meet the College of Arts and Sciences' foreign language requirement.

The following Biological Sciences (BSCI) courses may NOT be used in the elective category for majors or minors in the Department of Biological Sciences:

Code	Title	Credit Hours
BSCI 10001	HUMAN BIOLOGY (KBS)	3
BSCI 10002	LIFE ON PLANET EARTH (KBS)	3
BSCI 10003	LABORATORY EXPERIENCE IN BIOLOGY (KBS) (KLAB)	1
BSCI 10005	ANATOMY FOR VETERINARY TECHNICIANS	5
BSCI 11010	FOUNDATIONAL ANATOMY AND PHYSIOLOGY I (KBS) (KLAB)	3
BSCI 11020	FOUNDATIONAL ANATOMY AND PHYSIOLOGY II (KBS) (KLAB)	3
BSCI 16001	HORTICULTURAL BOTANY	3
BSCI 20019	BIOLOGICAL STRUCTURE AND FUNCTION	4
BSCI 20021	BASIC MICROBIOLOGY	3
BSCI 20022	BASIC MICROBIOLOGY LABORATORY	1
BSCI 21010	ANATOMY AND PHYSIOLOGY I (KBS) (KLAB)	4

BSCI 21020	ANATOMY AND PHYSIOLOGY II	4
BSCI 26002	ECOLOGICAL PRINCIPLES OF PEST MANAGEMENT	3
BSCI 26003	PLANT IDENTIFICATION AND SELECTION I	3
BSCI 26004	PLANT IDENTIFICATION AND SELECTION II	3
BSCI 40020	BIOLOGY OF AGING	3

Foreign Language College Requirement, B.S.

- Students pursuing the Bachelor of Science degree in the College of Arts and Sciences must complete 8 credit hours of foreign language.[1]
- Minimum Elementary I and II of the same language

[1] All students with prior foreign language experience should take the foreign language placement test to determine the appropriate level at which to start. Some students may start beyond the Elementary I level and will complete the requirement with fewer credit hours and fewer courses. This may be accomplished by (1) passing a course beyond Elementary I through Intermediate II level; (2) receiving credit through one of the alternative credit programs offered by Kent State University; or (3) demonstrating language proficiency comparable to Elementary II of a foreign language. When students complete the requirement with fewer than 8 credit hours and two courses, they will complete remaining credit hours with general electives.

Roadmap

This roadmap is a recommended semester-by-semester plan of study for this major. However, courses designated as critical (!) must be completed in the semester listed to ensure a timely graduation.

	Semester One		**Credits**
!	BSCI 10110	BIOLOGICAL DIVERSITY (ELR) (KBS) (KLAB)	4
!	CHEM 10060	GENERAL CHEMISTRY I (KBS)	4
!	CHEM 10062	GENERAL CHEMISTRY I LABORATORY (KBS) (KLAB)	1
	UC 10097	DESTINATION KENT STATE: FIRST YEAR EXPERIENCE	1
	Kent Core Requirement		3
	Kent Core Requirement		3
		Credit Hours	**16**
	Semester Two		
!	BSCI 10120	BIOLOGICAL FOUNDATIONS (ELR) (KBS) (KLAB)	4
!	CHEM 10061	GENERAL CHEMISTRY II (KBS)	4
!	CHEM 10063	GENERAL CHEMISTRY II LABORATORY (KBS) (KLAB)	1
	MATH 11010	ALGEBRA FOR CALCULUS (KMCR)	3
	Kent Core Requirement		3
		Credit Hours	**15**
	Semester Three		
!	BSCI 30140	CELL BIOLOGY	4
!	CHEM 20481	BASIC ORGANIC CHEMISTRY I	4
	Kent Core Requirement		3
	Kent Core Requirement		3
		Credit Hours	**14**
	Semester Four		
!	BSCI 30130	HUMAN PHYSIOLOGY	3
!	BSCI 30050	HUMAN GENETICS	3
!	CHEM 30301	INORGANIC CHEMISTRY I	2
	MATH 11022	TRIGONOMETRY (KMCR)	3
	Kent Core Requirement		3
		Credit Hours	**14**
	Semester Five		
!	BSCI 30171	GENERAL MICROBIOLOGY	4
!	BSCI 40581	ANIMAL PARASITOLOGY	4
!	CHEM 30105	ANALYTICAL CHEMISTRY I	3
!	CHEM 30107	ANALYTICAL CHEMISTRY LABORATORY I (WIC)	1
	MATH 30011	BASIC PROBABILITY AND STATISTICS	3
		Credit Hours	**15**
	Semester Six		
!	BSCI 40174	IMMUNOLOGY	3
!	CHEM 30284	INTRODUCTORY BIOLOGICAL CHEMISTRY	4
	CS 10062 or EMAT 15310	PROGRAMMING FOR PROBLEM SOLVING IN SCIENCES or CREATIVE CODING	3-4
	Kent Core Requirement		3
	Kent Core Requirement		3
		Credit Hours	**16**
	Semester Seven		
!	CLS 49010	CLINICAL MICROBIOLOGY: THEORY	4
!	CLS 49011	CLINICAL MICROBIOLOGY: APPLICATIONS	4
!	CLS 49012	CLINICAL IMMUNOLOGY: THEORY	1
!	CLS 49013	CLINICAL IMMUNOLOGY: APPLICATIONS	1
!	CLS 49014	CLINICAL MYCOLOGY: THEORY AND APPLICATIONS	1
!	CLS 49015	CLINICAL PARASITOLOGY: THEORY AND APPLICATIONS	1
!	CLS 49020	CLINICAL CHEMISTRY: THEORY	4
		Credit Hours	**16**
	Semester Eight		
!	CLS 49021	CLINICAL CHEMISTRY: APPLICATIONS	3
!	CLS 49022	URINALYSIS: THEORY	1
!	CLS 49023	URINALYSIS: APPLICATIONS	1
!	CLS 49030	IMMUNOHEMATOLOGY: THEORY	2
!	CLS 49031	IMMUNOHEMATOLOGY: APPLICATIONS	2
!	CLS 49032	COAGULATION: THEORY AND APPLICATIONS	1
!	CLS 49033	CLINICAL HEMATOLOGY: THEORY	2
!	CLS 49034	CLINICAL HEMATOLOGY: APPLICATIONS	2
!	CLS 49040	TOPICS IN LABORATORY MANAGEMENT	1
		Credit Hours	**15**
		Minimum Total Credit Hours:	**121**