

HEALTH PROFESSIONS AND PRELAW CENTER

Indiana University Bloomington ■ University Division ■ Maxwell Hall 010 ■ Bloomington IN 47405
812-855-1873 ■ Fax 812-856-2770 ■ hpplc@indiana.edu ■ www.hpplc.indiana.edu

CLINICAL LABORATORY SCIENCE PROGRAM Bachelor of Science (B.S.) Degree

Definition: Clinical Laboratory Scientists (also called Medical Technologists) perform diverse and complex laboratory analyses on biological samples from patients. They combine theoretical knowledge and technical skills to provide quality test results that are used for making diagnostic and therapeutic decisions.

The IU School of Medicine Department of Pathology and Laboratory Medicine offers a program leading to a Bachelor of Science in Clinical Laboratory Science. The course of study requires the applicant to complete three years of prerequisite work equaling **90 credit hours** at Indiana University Bloomington (or another campus or college) and one year of professional and clinical work at the Indiana University Medical Center in Indianapolis. Students entering the professional portion of the program must fulfill the preprofessional requirements listed below.

IMPORTANT

This document has been prepared for Indiana University Bloomington students by the Health Professions and Prelaw Center. Please note that specific requirements and policies can change at any time without notice. Students are responsible for obtaining the most current information directly from the application services, and the school(s) and program(s) in which they have an interest. Visit the following website: <http://medicine.iu.edu/hpp>, click on "How to Apply".

COURSES REQUIRED FOR ADMISSION ¹	Credit Hours
Written and Verbal Communication	
English Composition, ENG-W 131	3
Second Writing Course, ENG-W 231 (<i>preferred</i>) or other composition course	3
Public Speaking, CMCL-C 121, or Interpersonal Communication, CMCL-C 122	3
Biology^{2,3} (Minimum of 18 credit hours to include the following courses)	
Intro to Biology: Biological Mechanisms, BIOL-L 112; or Basic Biology by Examination, BIOL-E 112	3
Basic Human Physiology, PHSL-P 215; or Integrative Human Physiology, BIOL-P 451 (senior standing or permission of instructor required)	4-5
Microorganisms in Nature & Disease (lecture and lab) ⁴ , BIOL-M 200 (3 cr. hrs.) and 215 (1 cr. hr); or Microbiology (lecture and lab) ⁴ , BIOL-M 250 (3 cr. hrs.) and 255 (2 cr. hrs.)	4-5
Genetics, BIOL-L 311 (Prerequisite: BIOL-L 211)	3
Immunology ⁴ , BIOL-L 321 (Prerequisite: BIOL-L 211, BIOL-L 312 also recommended)	3
Mathematics (choose one course or combination of courses)	
a) Precalculus, MATH-M 025 (3 cr. hrs.) and Trigonometric Functions, MATH-M 026 (2 cr. hrs.); b) Precalculus with Trigonometry, MATH-M 027 (4 cr. hrs.); c) Brief Survey of Calculus, MATH-M 119 (3 cr. hrs.); or d) MATH-M 211 (or higher)	3-5
Statistics	
Introduction to Applied Statistical Methods, STAT-S 300 ⁵	3
Chemistry (Minimum of 18 credit hours to include the following courses)	
Principles of Chemistry I, CHEM-C 117	5
Organic Chemistry I (lecture and lab) ⁴ , CHEM-C 341 (3 cr. hrs.) and 343 (2 cr. hrs.)	5
Chemistry elective ⁴ : Organic Chemistry Lecture II, CHEM-C 342 (required course for IUB chemistry sequence)	3
Principles of Chemistry II: Intermediate Inorganic Chemistry - CHEM-N 330 (or CHEM-C 118)	5
Social and Behavioral Science Electives (two courses)	
Choose from the following departments (<i>preferred</i>) - Psychology, Sociology, Anthropology. Coursework, in Economics, minority studies, and Political Science will be accepted on approval (based on course content).	6
Humanities Elective – Choose one course from the following departments/categories⁶	
African American and African Diaspora Studies, Classical Studies, Communication and Culture (additional speech course), literature, English, film studies, Folklore, foreign languages and cultures, Gender Studies, History, Journalism, minority studies, Latino Studies, Philosophy, Religion, visual and performing arts.	3
Other Electives	23-27
TOTAL CREDIT HOURS TO BE COMPLETED PRIOR TO BEGINNING PROFESSIONAL PROGRAM	90

¹ A minimum grade of "C" (not "C-") is required for all courses required for admission (pre-professional courses).

² Careful planning is required. Some courses are taught during only one semester of each year (check the biology department website, <http://www.bio.indiana.edu/undergrad/coursesched.html>, and the "Schedule of Classes"). Others have strict prerequisite and/or co-requisite course requirements. (Visit the College of Arts & Sciences bulletin websites: <http://www.indiana.edu/~bulletin/iub/>.)

³ Anatomy, ANAT-A 215, is highly recommended as well, but not required.

⁴ These courses must be taken within 6 years prior to beginning the program.

⁵ Other options: MATH-K 300 or 310, PSY-K 300 or 310, CJUS-K 300, SPEA-K 300, ECON-E 370 or S370, LAMP-L 316, SOC-S 371.

⁶ Other areas can be taken with approval of program's admissions committee.

Suggestions for Other Electives

The Clinical Lab Science program prefers that you choose electives from the Approved Distribution courses chosen by the faculty of the College of Arts and Sciences (see Appendix II of the bulletins listed below in note). Additional major level science courses will allow for flexibility in career planning. Also, you might wish to choose courses that will apply towards a minor or an alternative major. Enrolling in elective courses listed below does not necessarily increase your chances for admission.

Chemistry electives: Biological Chemistry (CHEM-C 483), Analytical Chemistry (CHEM-A 318), Quantitative Analysis/Instruments (check with Chemistry department advisor).

General Electives: Medical Terminology (CLAS-C 209), Human Anatomy (ANAT-A 215), Biological Mechanisms Laboratory (BIOL-L 113), Cell Biology (BIOL-L 312 and lab, BIOL-L 313); Medical Microbiology (BIOL-M 440 & lab, BIOL-M 445), Microbial Physiology and Biochemistry (BIOL-M 350 and lab), Introduction to Computers (various options).

NOTE: Careful planning is required. Some courses are only taught during one semester of each year (check the biology department's website, <http://www.bio.indiana.edu/undergrad/coursesched.html>, and the "Schedule of Classes"). Others have strict prerequisite and/or co-requisite course requirements. (Visit the College of Arts & Sciences bulletin website: <http://www.indiana.edu/~bulletin/iub/>).

ADMISSION REQUIREMENTS AND STATISTICS

Shadowing and Observation

None required. However, the advisors in the Health Professions and Prelaw Center (HPPLC) strongly recommend that applicants spend several hours observing in medical technology laboratories. Such experience will help you determine whether or not this field of study is right for you.

Volunteering and Other Professional Development

None required. Work experience in the clinical lab science field or on-site observation of a clinical lab scientist is not required but will be helpful, especially during the interview.

Grade Point Average (GPA)

For qualified applicants for the fall class of 2009 at the time of selection:

- mean GPA = 3.60 (range: 3.16 – 4.00)
- mean Math/Science* GPA = 3.57 (range: 3.00 – 4.00)
- 37 applicants: 17 offered admission (class size: 13 this year, normal capacity 12)

*Math/Science GPA is calculated using Biology, Chemistry, Math, Statistics, Physics and Computer Science courses.

Admission Test

None required.

Application Information

- Preference is given to applicants who are Indiana residents. Preference is also given to applicants who complete the majority of applicable course work at a public college or university in Indiana (even if out-of-state). This policy is applied at the time of program application.
- A minimum grade of **C** (not **C-**) is required for each admission course (not including electives).
- Have a minimum **math/science GPA of 2.50** and a minimum **cumulative GPA of 2.50** at the time of application. Both must be maintained subsequent to the interview. An applicant with GPAs at or near the minimum standards is eligible to be considered but will likely not be competitive for admission.
- Certain science courses (indicated on first page with footnote #4) must be completed within 6 years prior to beginning the CLS program.

- **Repeated courses:** A maximum of 15 hours may be replaced. In addition to the repeated courses policy, admission policies for academic bankruptcy and fresh start also exist and are available at the admissions site referenced on the next page.
- Admission information and applications are available at <http://medicine.iu.edu/hpp>, click on “How to Apply”.
- File an application for admission to the IU School of Medicine Health Professions Programs between September 1 and December 1 of the year prior to entry into the program.
- An Undergraduate Application or an Intercampus Transfer (ICT) Application to IUPUI must be submitted. Website for ICT application: <http://www.iupui.edu/~moveiu/>.

Letters of recommendation

None required.

Admission Interview

- Interviews are usually conducted in November and December.
- There will be two interviewers – one faculty member and one clinical supervisor.
- Expect the oral interview to last for 20 minutes. Also be prepared to spend 45 minutes **each** a) attending an information session, 2) producing a writing sample and 3) taking a tour.
- Applicants are encouraged to bring questions about the program with them and relax!
- Applicants should wait until January 1 to contact the program if they haven’t been contacted about eligibility or to schedule an interview.
- Mailed notifications regarding admission are sent on January 15.

Credit Hours Required Prior to Beginning Professional Program (*but not necessarily at time of application*): 90 credit hours which include required courses listed on the first page. Remedial courses will **not** count towards the 90 credit hours.

Personal statement

None required.

ADMISSION ISSUES, SUGGESTIONS AND NOTES

Consider a Back-up Plan

It’s always wise to have a “Plan B” when applying to a program that has competitive admissions. Schedule an appointment to see a HPPLC health professions advisor to explore your options by calling 812-855-1873.

Other Admission Issues, Suggestions and Notes

- IUPUI’s University College has created a way to help students decide whether or not CLS is the right major for You. See http://uc.iupui.edu/uploadedFiles/Major_Career_Connections/CLS.pdf.
- Work experience in CLS is not required but will be helpful to the applicant. All work experience is taken into consideration.
- In order to practice as a certified Clinical Lab Scientist, the individual must be a graduate of an accredited program and pass a national certifying examination. A list of states requiring licensure may be obtained from the Indiana University Clinical Laboratory Science Program or the Centers for Disease Control in Atlanta, Georgia.

SELECTION CRITERIA

CLS is a competitive admission program. Satisfying the basic admission requirements does not guarantee acceptance into the program. At this time, the following factors are considered in admission decisions:

- Weighted GPA = (2 x Science/Math GPA)* + CGPA / 3 (64%)
- Admission interview (13 %)
- Essay (13 %)
- Motivation (10 %)
- Applicants must earn at least 80% of the total points possible on both the oral and written components of the interview.
- Applicants must also earn at least 70 of the 100 possible “admission profile points.”
- Status as Indiana resident. Nonresidents who complete at least 51% of applicable course work at a public college or university in Indiana are considered the same as residents for **admission** purposes (out-of-state tuition still required).

* Math/Science GPA is calculated using Biology, Chemistry, Math, Statistics, Physics and Computer Science courses.

PROFESSIONAL PROGRAM STARTING DATE

The professional program begins once a year, in the fall semester (usually early-mid August).

CAREER INFORMATION

- Average salary range for new graduates in Indiana: \$38,000 - 42,000 annually. Starting salaries may be higher in other parts of U.S. and for employment in industry, product sales, etc.
- Employment opportunities are excellent throughout the United States. There is a **critical shortage** of Clinical Laboratory Scientists across the nation.
- All (100%) members of recent graduating classes who sought employment upon graduation found employment by graduation or within the next 3 months. Overall, approximately 20% of graduates at some time choose to continue their education in graduate or professional programs in medicine, dentistry, physician assistants, pathologists' assistants, basic science, or other science-related programs.
- Learn more at the Bureau of Labor Statistics website: <http://www.bls.gov/oco/ocos096.htm> (May 2009).
- *For more information about the field of Clinical Laboratory Science, visit the following websites:*
 - IU School of Medicine Health Professions Programs: <http://www.medicine.iu.edu/hpp>.
 - The American Society for Clinical Pathology, <http://www.ascp.org>.
 - American Society for Clinical Lab Science, <http://www.ascls.org>.

PROGRAM CONTACT INFORMATION

Co-Directors:

Linda Marler, M.S., MT(ASCP)SM
Associate Professor
Email: Immarler@iupui.edu
Phone: (317) 491-6219

Diane Leland, PhD, MT(ASCP)SM
Email: dleland@iupui.edu
Phone: (317) 491-6646

Mailing address:

Clinical Laboratory Science Program
Department of Pathology and Laboratory Medicine
Indiana University School of Medicine
CPL, Room 6002G
350 W. 11th Street
Indianapolis, IN 46202
Phone: (317) 491-6969

~~~~~

We encourage you to use e-mail to ask questions and to communicate with our HPPLC advisors concerning clinical laboratory science programs not only at IUPUI but nationwide and Canada as well. Send your email to an individual HPPLC advisor or to [udivhpp@indiana.edu](mailto:udivhpp@indiana.edu).

Please add your name to the HPPLC listserv by visiting the HPPLC website: [www.hpplc.indiana.edu](http://www.hpplc.indiana.edu). Also check the HPPLC website for notices about upcoming meetings, the Health Programs Fair, campus visits by admission representatives and other items of interest.

### IMPORTANT

This document has been prepared for Indiana University Bloomington students by the Health Professions and Prelaw Center. Please note that specific requirements and policies can change at any time without notice. Students are responsible for obtaining the most current information directly from the application services, and the school(s) and program(s) in which they have an interest. Visit the following website: <http://medicine.iu.edu/hpp>, click on "How to Apply".