HEALTH PROFESSIONS AND PRELAW CENTER

Indiana University Bloomington ■ University Division ■ Maxwell Hall 010 ■ Bloomington IN 47405
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CYTOTECHNOLOGY PROGRAM

Bachelor of Science (B.S.) Degree

Definition: Cytotechnologists inspect and evaluate cells or groups of cells to detect cellular changes indicative of cancer and other diseases. The prime objective is to detect cancer early, when the best chance for a complete cure exists.

The Indiana University School of Medicine Department of Pathology and Laboratory Medicine offers a program leading to a Bachelor of Science in Cytotechnology. The course of study requires the applicant to complete three years of prerequisite work equaling *90 credit hours* at Indiana University in 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, or Projects in Reading and Writing, ENG-W 170	3
Second Writing Course, ENG-W 231 *(preferred),* **or** other composition course	3
Public speaking, CMCL-C 121 , **or** Interpersonal Communication, CMCL-C 122	3
Biology - Minimum of 25 credit hours, including the following courses	
Intro to Biology: Biological Mechanisms, BIOL-L 112, **or** Basic Biology by Examination, BIOL-E 112	3
Biology Lab, BIOL-L 113	3
Human Anatomy, ANAT-A 215	5
Human Physiology, PHSL-P 215, **or** Integrative Human Physiology, BIOL-P 451 (senior standing required)	5
Biology Electives [2] **– Choose a minimum of three upper level biology courses to total a minimum of 9 credit hours. One lab is strongly recommended. Suggested courses include, but are not limited to:**	
Micoorganisms in Nature and Disease, BIOL-M 200 (3 cr. hrs.) and lab, M215 (1 cr. hr.) **or** Microbiology, BIOL-M 250 (3 cr. hrs.) and lab, M255 (2 cr. hrs.)	
Molecular Biology [3], BIOL-L 211 (3 cr. hrs.)	
Immunology [4], BIOL-L 321 (3 cr. hrs.)	
Genetics [4], BIOL-L 311 (3 cr. hrs.) **and** Genetics Lab [4], BIOL-L 319 (3 cr. hrs.)	
Cell Biology [4], BIOL-L 312 (3 cr. hrs.) **and** Cell Biology Lab [4], BIOL-L 313 (3 cr. hrs.)	
Developmental Biology [4], BIOL-L 317 (3 cr. hrs.) **and** Developmental Biology Lab [4], BIOL-Z 318 (2 cr. hrs.)	
Human Tissue Biology (Histology) [4], ANAT-A 464 (4 cr. hrs.)	9
Mathematics (choose one of the following)	
Precalculus, MATH-M 25, MATH- 025, **or** higher	3-4
Chemistry	
Elementary Chemistry I lecture and lab, CHEM-C 101and 121 **or** Principles of Chemistry I, CHEM-C 117 [3,5]	5
Elementary Chemistry II lecture and lab, CHEM-C 102 and 122 **or** Principles of Chemistry II, CHEM-C 118 **or** Intermediate Inorganic Chemistry, CHEM- N330 [5]	5
Social and Behavioral Science Electives (two courses)	
Choose from the following (preferred) departments - Psychology, Sociology, and 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/categories)	
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	33-34
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] Biology courses not listed here must be approved by program director (see "Program Contact Information").
[3] CHEM-C 117 and BIOL-L 112 are required prerequisites for BIOL-L 211. Many upper level Biology courses require BIOL-L 211 as a prerequisite.
[4] Check prerequisites for these courses.
[5] CHEM-C 117 and CHEM-N 330 suggested for flexibility in career planning and choosing advanced courses in chemistry.

Suggestions for Other Electives
Electives allow students to explore areas of interest and broaden their education. 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 courses listed below does not necessarily increase your chances for admission. However, the nature of electives and degree of course difficulty are compared when students are otherwise equal.

Biology Electives (see note below): Microbial Physiology and Biochemistry (BIOL-M 350, BIOL-L 360), Genetics (BIOL-L 311 & lab, BIOL-L 319), Intro to Human Genetics (BIOL-L 331), Principles of Immunology (BIOL-L 321), Cell Biology (BIOL-L 312 and lab, BIOL-L 313), Human Parasitology (BIOL-M 375), Virology (BIOL-M 430, BIOL-M 435), Medical Microbiology (BIOL-M 440, 445), Endocrinology (BIOL-Z 466).

Electives: Art Appreciation (FINA-H 100), Medical Terminology (CLAS-C 209), Organic Chemistry (CHEM-C 341, CHEM-C342, and lab, CHEM-C 343), Statistics (various options), Biological Chemistry (CHEM-C483), computer course (various options), The Nature of Cancer (HPER-H 320), physics (PHYS-P 101, 201 or 202), Disease in the Human Body (MSCI-M 131), mathematics (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 is required, but the advisors in the Health Professions and Prelaw Center (HPPLC) strongly recommend that applicants spend several hours observing in cytotechnology and medical technology laboratories.

Volunteering and Other Professional Development
None is required. However, HPPLC suggests that such experience is a valuable component of your education. Work experience in the cytotechnology field or on-site observation of a cytotechnologist is not required but would be ***very helpful*** to the applicant.

Grade Point Average (GPA)
For qualified applicants for the fall class of 2011 at the time of selection:
- mean GPA = 3.33 (range: 2.78 - 3.95)
- mean biology GPA = 3.42 (range: 2.88 – 4.00)
- 16 qualified applicants: 8 offered admission (class size: 8)

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 ***biology GPA of 2.50*** (all biology) and a minimum ***cumulative GPA of 2.50*** at the time of application. Both must be maintained subsequent to the interview. An applicant meeting these minimum standards is eligible to be considered, but will not be competitive.
- Biology credits earned more than 7 years prior to application must be updated by taking 3 additional credit hours related to cell biology within 12 months prior to the beginning the professional program.
- Repeated courses: A maximum of 15 hours may be replaced. In addition to the repeated course policy, admission policies for academic bankruptcy and fresh start also exist and are available at the admissions site referenced below.
- 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 before application is submitted. Website for ICT application: http://www.iupui.edu/~moveiu/.

Letters of recommendation
Not required for IU's Cytotechnology program.

Admission Interview
- Interviews are conducted in January.
- Be prepared to answer the question, "Why do you want to be a cytotechnologist?"
- Applicants are usually notified regarding acceptance by mid-February.

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
- In considering cytotechnology as a career, prospective students should enjoy biology and microscopy.
- Work experience in the cytotechnology field or on-site observation of a cytotechnologist is not required but will be ***very helpful*** to the applicant.

SELECTION CRITERIA

Cytotechnology 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:

- Cumulative grade point average or CGPA (25%)
- GPA for all biological science courses, including anatomy and physiology (26%)
- Admission interview (49%)
- Nature of electives and degree of course difficulty are compared when students are otherwise equal.
- Status as Indiana resident: The first 8 seats are reserved for Indiana resident who meet eligibility requirements. Alternates are then ranked by final score.
- Expect the oral interview to last for about an hour. There will be three interviewers – two program faculty members and one pathologist.
- Applicants should wait until January 3 to contact the program if they haven't been contacted about eligibility or interview.
- Decisions are usually made by mid-February.

PROFESSIONAL PROGRAM STARTING DATE

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

CAREER INFORMATION

- Learn more about Cytotechnology at the following websites:
    - View a podcast of recent Cytotechnology students and hear about their experiences in the IUPUI program: http://www.iupui.edu/hls/undergrad/cytotechnology.html.
    - IU School of Medicine Department of Pathology and Laboratory Medicine: http://pathology.iupui.edu/body.cfm?id=1008&SubDomain=true.
    - American Society for Cytotechnology (http://www.asct.com/) and the American Society of Cytopathology (http://www.cytopathology.org/).
    - Cytology Stuff, http://www.cytostuff.com/.

- Clinically, work in the field of cytotechnology is becoming more diversified as the population ages. There will soon be screening for cancer genetic markers as well as morphology of cells. Currently, Cytotechnologists are using computer assisted microscopes to screen for abnormal cells. Many are performing molecular diagnostic tests for detecting the Human Pappiloma virus, among others.
- Recent IU graduates received an average of $47,000 (Range $44,000- 50,000) when accepting their first job.
- Employment opportunities are excellent throughout the United States. 75% of IU graduates accepted positions in Indiana, 25% accepted positions out of state. Note that there is an increasing shortage of cytotechnologists.

PROGRAM CONTACT INFORMATION

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We encourage you to use e-mail to ask questions and to communicate with our HPPLC advisors concerning cytotechnology programs not only at IUPUI but nationwide and Canada as well. Send your email to an individual HPPLC advisor or to udivhpp@indiana.edu.

Please add your name to the HPPLC listserve by visiting the HPPLC website: **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.
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