

**University of Nebraska Medical Center  
School of Allied Health Professions**

**Clinical Laboratory Science Program  
Degree Advancement Option**

## **Student Handbook**

**July 2009 – June 2010**



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**I. Overview**

**UNMC School of Allied Health Professions  
Clinical Laboratory Science Program**



**BSCLS Degree Advancement Option  
Academic Calendar 2009-2010**

**Summer/Fall 2009 Semester – July 6-December 18**

Application Deadline for Summer/Fall 2009 .....	May 1
Registration Week .....	June 8
(\$35 Late Fee for any registrations completed after June 12)	
Orientation Week for New Students .....	June 29-July 3
1 <sup>st</sup> Day of Class .....	July 6
Last Day to ADD Classes .....	July 13
Last Day to DROP Classes .....	August 28
Holidays – No Class	
Labor Day .....	September 7
Thanksgiving .....	November 26-29
Last Day of Class .....	December 14

**Spring 2010 semester – January 11-May 7**

Application Deadline for Spring 2010 .....	October 1
Registration Week .....	November 30
(\$35 Late Fee for any registrations completed after December 4)	
Orientation Week for New Students .....	January 4-8
1 <sup>st</sup> Day of Class .....	January 11
Last Day to ADD Classes .....	January 18
Last Day to DROP Classes .....	March 5
Holidays – No Class	
Martin Luther King Day .....	January 18
Spring Break .....	March 15-21
Last Day of Class .....	May 7
Graduation Date* .....	May 8

*\*Diplomas will be mailed after the graduation date.*



## ***Welcome from the Director***

*Janice Tompkins, MPH, MT(ASCP)  
Director, SAHP Distance Education*

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Welcome to the Clinical Laboratory Science Program, Degree Advancement Option (DAO). Through this program, you are a part of the larger University of Nebraska Medical Center and the UNMC School of Allied Health Professions communities. Even though you will not physically be in the on-campus setting, we want you to feel connected to our faculty, staff and your student peers. This will be achieved by regular communication between you, the CLS program faculty and the SAHP Distance Education Office staff. As a student at the University of Nebraska Medical Center, you represent the University of Nebraska in a very unique way as you study with us and still remain in your home community; allowing you to continue your education and advance your professional growth and opportunities.

This handbook contains information to guide you through this educational experience at UNMC. I encourage you to read through the handbook to become familiar with policies and procedures specific to this online option at UNMC. I also invite you to review the UNMC Student Handbook and the School of Allied Health Professions Handbook for some of the broader educational and professional policy discussions that apply to our institution and students.

Healthcare delivery and technology is changing rapidly, but must be guided by core values of excellence and innovation, while maintaining moral integrity and high ethical principles. Our goal is for students to acquire the knowledge and skills needed to be a member of the healthcare team, to provide the best laboratory results that improve the quality of care given to our patients and resulting in the best outcomes for those patients. In addition, we want to foster the opportunity for continued professional growth and advancement for our students.

Janice Tompkins, MPH, MT(ASCP)

## I. Overview – continued

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### Statement of Diversity

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It is the belief of the Clinical Laboratory Science Program Degree Advancement Option that diversity within the Program at all levels enhances the quality of the education offered to our students. It also improves the level of service our profession provides to other healthcare professionals and to the public. A broad range of viewpoints facilitates better answers to complex questions. Understanding those viewpoints facilitates the delivery of better healthcare and service to those served by our profession.

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### Student Rights & Responsibilities

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The *Bylaws of the Board of Regents* protect the rights of each member of the university community. Each individual has the right to be treated with respect and dignity, and each has the right to learn. With these rights comes the responsibility of each individual to maintain an atmosphere in which others may exercise their human rights and their right to learn. Chapter V of the bylaws fully delineates the rights and responsibilities of students.

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### Statement of Professionalism

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University of Nebraska Medical Center faculty, administrators, staff and students comprise an academic health science community. Within this community professionalism is displayed through interpersonal and discipline-specific skills. Professionalism involves developing and demonstrating skills while displaying mutual trust, respect, responsibility and educational accountability. Professionalism thrives in an environment that emphasizes supportiveness, high quality patient care and ethical conduct. Those in formal leadership roles should model the highest standards of professional conduct.

Professionalism embodies legitimate expectations among all members of the academic health science community. For example, the student or employee can expect the teacher or supervisor to provide instruction, guidance, and leadership. Leadership involves helping others to achieve their highest levels of performance, discerning those who need individual assistance, and then facilitating improvement. Similarly, the teacher or supervisor can expect the student or employee to make the necessary investment of energy and intellect to acquire the knowledge, understanding and skills concomitant with being a competent professional. The development of relationships characterized by professionalism is the duty of all faculty, administrators, staff and students. All members of the community can and should expect others to prepare appropriately for the accomplishment of tasks and the fulfillment of responsibilities.

## I. Overview – continued

Professionalism is fostered by a supportive climate. All faculty, administrators, staff and students should strive to create an environment characterized by:

- avoidance of and no tolerance for sexual harassment, demeaning or derogatory remarks, threats, intimidations, verbal or physical abuse;
- acceptance and understanding of individual and cultural differences in race, religion, ethnicity, age, gender, sexual orientation or disabilities;
- openness in communication;
- truthful and positive feedback;
- constructive, corrective feedback in a private setting whenever possible;
- assignment of duties and tasks that promote professional development;
- performance of duties and assignments in an exemplary manner;
- an emphasis on solving problems and modifying systems, not blaming people.

Professionalism must be shown in all faculty-student relationships. Learning occurs best in an environment of integrity and mutual respect. As it is expected that students will learn to conduct themselves according to accepted professional standards, faculty must model appropriate professional behaviors in their interactions with students.

In an academic health science community, professionalism must also be shown at all times to patients and their families. Mutual trust, respect, responsibility and accountability should typify the patient-provider relationship. The patient-provider relationship should also model the characteristics of the supportive climate outlined above.

Professionalism must be shown in all relationships. This policy is also reviewed in the UNMC Student Handbook and the School of Allied Health Professions Student Handbook.

## I. Overview – continued

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### Prerequisite Transfer Credit

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#### Acceptable Credit & Course Requirements

The applicability of transferred credit to entrance and degree requirements or petitions for advanced standing is determined by the college through the admissions committee on an individual basis after all necessary applications materials have been submitted. The Clinical Laboratory Science Program reserves the right to accept or reject any transfer hours and to determine how transfer credits apply toward the degree in Clinical Laboratory Science. Credits must be earned at a regionally-accredited institution of higher learning. **A maximum of 66 semester credit hours of college-level hours earned will be accepted from a community college.**

Please note that applicants to the BSCLS Degree Advancement Option must:

- Graduate from a NAACLS-accredited MLT/CLT program and be certified or registry-eligible;
- Complete a minimum of 86 hours of specific college prerequisite courses **prior to enrollment** in the program;
- Present a minimum of 20 semester hours from a baccalaureate degree-granting institution (only 66 semester credit hours may be transferred from a community college);
- Complete a minimum of 6 semester credit hours of science coursework (biology and/or chemistry) from a baccalaureate degree-granting institution at the upper level (300-400);
- Present a C or better for all 86 hours of prerequisite coursework;
- Present a prerequisite GPA of at least 2.5 on a 4.0 scale;
- Present a math and science GPA of at least 2.5 on a 4.0 scale.

The 86 hours of specific college prerequisite coursework must include the following courses:

- English Composition    6 semester credit hours
- College Algebra        3 semester credit hours
- Communications        3 semester credit hours
- Statistics                3 semester credit hours
- Biology                 16 semester credit hours  
(including microbiology, immunology, and genetics)
- Chemistry               16 semester credit hours  
(including general, organic, and upper-level chemistry such as biochemistry)

Coursework which will **not** apply to admission or degree requirements are as follows:

- Hours graded “D+” or lower from any institutions whether accredited or non-accredited
- Courses graded Incomplete or Withdrawal and audit courses
- Courses completed but with no credit awarded
- Remedial courses will not be recognized, even though credit may have been awarded, since these courses are considered to be pre-college level
- Courses that are primarily continuing education in nature

Coursework recorded which **may** apply to admission or degree requirements includes:

- Credits presented for transfer from another clinical laboratory science program, based on evaluation and decision of the admissions committee
- Hours earned and presented for transfer through various examinations: Advanced Placement Programs, CLEP, DANTES, and ACE.
- Hours earned and presented for transfer for which the student received a grade of *Pass* or *Satisfactory*. Only one course may be accepted with a grade of *Pass* or *Satisfactory*, and it cannot be used to satisfy a math or science course requirement.
- Courses from universities and colleges in other countries will be accepted only after an evaluation and recommendation by an approved agency. For a current list of agencies, contact the Distance Education office.
- Hours earned in independent studies (correspondence or Internet-based) courses may be accepted and applied toward degree requirements in the same manner as indicated for other courses from regionally accredited institutions

It is emphasized that even though coursework may transfer, the CLS Program is the final authority on how these courses and credits apply toward a degree in Clinical Laboratory Science. The CLS Program reserves the right to evaluate applicability of credits older than 5 years. Transfer credits are recorded with no grade or quality points assigned. However, all grades from transfer courses may be considered for admission purposes.

## **Credit By Examination**

Students who believe they are prepared to pass an examination covering content in required courses are encouraged to do so. The most commonly used methods of obtaining credit by examination are as follows:

### **Advanced Placement Program (APP)**

College Entrance Examination Board (CEEB) Advanced Placement Program examinations are used to grant college credit to talented high school students completing college-level study in high school. APP hours awarded by other institutions are transferrable for enrolled students by submitting an official college transcript. Credit hours earned by APP examinations will be accepted in the math and sciences, and count towards the 20 required hours from a baccalaureate degree-granting institution. This credit will not fulfill the 6 semester credit hours of science coursework from a baccalaureate degree-granting institution at the upper level (300-400).

## **College Level Examination Program (CLEP)**

CLEP Subject and General Exams are recognized at UNMC for students who apply for admission and complete enrollment. CLEP hours appearing on the transcripts of other institutions are not honored for transfer. Scores must be submitted to the institution before credit can be awarded.

A maximum of 6 credit hours will be accepted for transfer. Any credit earned in a math or science subject area will only be accepted towards the electives requirement. Credit hours earned by CLEP examinations will count towards the 20 required hours from a baccalaureate degree-granting institution.

## **Defense Activity for Non-Traditional Education Support (DANTES)**

DANTES exams provide opportunities for military personnel to continue their education while on active duty with the Armed Forces of the United States. DANTES hours appearing on the transcripts of other institutions are not honored for transfer. Scores must be submitted to the institution before credit can be awarded.

A maximum of 6 credit hours will be accepted for transfer. Any credit earned in a math or science subject area will only be accepted towards the electives requirement. Credit hours earned by DANTES examinations will count towards the 20 required hours from a baccalaureate degree-granting institution.

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***\*The maximum number of credit by examination hours that will be accepted for transfer is 6.***

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## **American Council of Education (ACE) Recommendations**

Currently enrolled students and new applicants submitting official records of service school are awarded credit as directed by the Guide to Evaluation of Educational Experience in the Armed Services. Many service schools are not identified as “collegiate” in nature and credit is not awarded. Hours for collegiate schools are recorded on the student’s permanent military record. There is no requirement for a score other than endorsement by the ACE guide and an official record of completion of the service school.

Education experience hours appearing on the transcripts of other institutions are not accepted for transfer. The applicant must submit an official AARTS or SMART transcript (Army ACE Registry Transcript System or Sailor/Marine Corps ACE Registry Transcript).

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## **International Student Requirements**

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All students who completed coursework from a foreign institution must have the transcript evaluated by an approved evaluation agency. For a current list of approved agencies, contact the Distance Education office. All applicants will be required to take preadmission courses in the United States as designated by the admissions committee.

The CLS Program wants all students to be successful in their coursework and be active participants in the educational experience. Therefore, all students whose native language (or language of nurture) is not English need to show proof of English proficiency for full academic admission into UNMC. All students must possess the ability to read English with ease, understand English as used in lecture and group discussions and express thoughts quickly and efficiently in spoken as well as written English.

English proficiency for institutional entrance into UNMC can be demonstrated by any one of the following ways:

- |                                 |     |
|---------------------------------|-----|
| ■ Paper-based TOEFL* exam       | 600 |
| ■ Internet-based TOEFL* exam    | 100 |
| ■ Computer-based TOEFL* exam    | 250 |
| ■ ACT English subscore          | 18  |
| ■ SAT Critical Reading subscore | 435 |

*\*Test of English as a Foreign Language*

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## Clinical Laboratory Science Program Curriculum

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### CLS Courses

The Plan of Study includes 39 hours of theory, practical application and technical performance experiences gained through lectures, clinical case studies, independent study and supervised laboratory experiences. The patient-oriented learning environment includes all areas of a full-service, accredited clinical pathology laboratory. The faculty advisor will work with the student to select an appropriate schedule to complete their Individual Plan of Study.

The 39 hours includes the following courses:

- |   |                |
|---|----------------|
| ■ CLS 412 Clinical Laboratory Science Theory, Application & Correlation | 5 credit hours |
| ■ CLS 414 Clinical Chemistry I  | 4 credit hours |
| ■ CLS 415 Clinical Chemistry II   | 3 credit hours |
| ■ CLS 416 Clinical Hematology I   | 4 credit hours |
| ■ CLS 417 Clinical Hematology II  | 3 credit hours |
| ■ CLS 418 Clinical Microbiology I                                       | 4 credit hours |
| ■ CLS 419 Clinical Microbiology II                                      | 3 credit hours |
| ■ CLS 420 Clinical Immunology & Molecular Diagnostics                   | 1 credit hour  |
| ■ CLS 422 Clinical Immunohematology I                                   | 3 credit hours |
| ■ CLS 423 Clinical Immunohematology II                                  | 2 credit hours |
| ■ CLS 424 Phlebotomy  | 1 credit hour  |
| ■ CLS 426 Urine & Body Fluid Analysis                                   | 1 credit hour  |
| ■ CLS 430 Clinical Laboratory Science Management I                      | 2 credit hours |
| ■ CLS 431 Clinical Laboratory Science Management II                     | 3 credit hours |

## I. Overview – continued

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### Preceptor Guidelines & Responsibilities

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A vital feature of the UNMC Clinical Laboratory Science Program Degree Advancement Option (DAO) is the support provided by volunteer program preceptors. The DAO would not be possible without the assistance and dedication of our preceptors. A preceptor may be many things to a student, but the major responsibilities include proctoring exams, documenting continued competency and/or proficiency in specific areas, and overall mentoring to the student.

All preceptors must meet the minimum requirements necessary to be accepted by the admissions committee, which includes the following criteria:

- Bachelors degree, preferably in Clinical Laboratory Science or other healthcare-related field
- Certification, preferably MT(ASCP) or CLS(NCA)
- Supervisor/Educator experience

Throughout the student's enrollment in the DAO, the preceptor may be called upon to:

- Proctor (or arrange for proctoring of) quizzes and/or exams at a mutually agreeable time and location for the proctor and the student.
- Provide requested documentation of competency and/or proficiency of the student's technical performance.
- Provide verbal and/or written feedback evaluating a presentation or demonstration given by the student.
- Allow the student to study clinical cases, make digital copies of images, and consult supervising technologists, laboratory managers, or physicians while maintaining patient confidentiality in accordance with the employer's policies and procedures.
- Allow the student to conduct informal group discussions, survey staff, and/or initiate a quality improvement project.
- Inform the program of any significant problems that develop which require faculty attention, knowledge, or consultation.

### Proctoring of Exams

Faculty advisors will send preceptors all passwords needed for any course the student is currently enrolled in. The degree advancement option (DAO) student will need to make arrangements with their preceptor to schedule each exam session. As the student pulls up the page in Blackboard to access the exam, preceptors need to enter the appropriate password and then proctor the exam as the student completes it. Copying, printing or saving of examinations by the students is not allowed.

## **Proctoring of Exams – continued**

Students should not leave the testing area with any printed materials generated during an exam, unless specifically stated in the instructions. If something needs to be faxed, we prefer that the preceptor fax those materials. The student will then notify both the faculty contact for the course and his or her faculty advisor that the exam/assignment has been completed.

Students will be permitted to have a calculator when approved, but the calculator may not be pre-programmed with formulas, calculations or other sensitive information. Use of a calculator will be approved for each exam as appropriate.

Students will not be permitted to have academic material near their seats. Examples include, but are not limited to the following:

- Cellular telephones, personal computers, mechanical or electronic devices, such as personal digital assistants (PDAs), devices with computer communication and/or memory capability, electronic paging devices, recording or filming devices, iPods or radios
- Coats, jackets, headwear, backpacks, book bags, briefcases
- Books, notes, study materials

If the internet disconnects for some reason while the student is taking an exam, the preceptor should attempt to log back in using the password when reconnected. If students save their exam responses periodically, they may be able to pick up where they left off. If a message appears that the exam has already been submitted and the student is not allowed to retake the exam, immediately contact either the course faculty contact(s) or faculty advisors (Jan or Sandy) via phone. They will clear the exam attempt, at which time you can reenter the password to allow the student to begin the exam again. All entered information will be lost whenever an exam is cleared, but this process will allow a student to complete the exam at the originally scheduled time.

Any student who abuses the testing guidelines will be asked to surrender the unfinished examination to the proctor/exit Blackboard and asked to leave the examination area. The proctor will notify the appropriate UNMC faculty contact and faculty advisor. The proctor will be sent an Unprofessional Behavior Documentation Form, ask that it be signed by the student, and return it to the UNMC faculty advisor. A conference with a UNMC program official will follow. This form then becomes a part of the student's permanent record. This may be grounds for dismissal from the Clinical Laboratory Science Program.

If the student's approved preceptor/proctor is unable to proctor an exam and requests someone at their facility to substitute for them, UNMC must be notified. The student should send an e-mail to the course faculty contact, the faculty advisor (Jan or Sandy) and also their approved preceptor/proctor prior to taking the exam. This e-mail needs to include the name of the substitute proctor, their title, e-mail address and phone contact information.

## **Proctoring of Remedial Work**

If a student scores <70% on any single exam he or she will be required to complete remedial work on the missed information. If a student scores <75% on two or more exams in the same course they will also be required to do remedial work.

Remedial work must be completed in a proctored environment, as exams are not to be released to students at any time. The time needed to complete remedial work will be dependent on how many exam questions were missed on the original exam. Students will need to use textbooks, references, etc. to complete the remedial work, so the limitations mentioned above for exams, do NOT apply to remedial work.

When a DAO student is required to complete remedial work, the preceptor/proctor will be notified by the student's faculty adviser and sent the appropriate password to allow the student access to the remedial work on Blackboard. The DAO student must then schedule a time that is convenient with the proctor to complete the assigned remedial work. Remedial work does not change the student's original earned score, but is required for the student to continue in the course.

## **Documenting Continued Competency/Proficiency**

As part of each clinical course that a degree advancement student takes, UNMC needs to have documentation of continued competency/proficiency in that area. Degree advancement students are not required to take wet practical exams or complete technical rotations. They are given credit for their current employment work experience and their CLT/MLT training experience. However, we need to document continued competence of laboratory skills. This documentation can consist of in-house competency testing they complete and/or documentation of any proficiency testing they perform, such as CAP surveys. The documentation should include the testing completed, along with the scores for that testing. In the case of proficiency testing such as CAP surveys, the peer results from the survey organization should be included. If you do not have this documentation available for the degree advancement student, please notify the faculty advisor. The grade for a course will not be issued until this requirement is satisfied.

Documentation for CLS 424 Phlebotomy will be a letter from the student's preceptor, on the facility's letterhead, describing the student's past and current phlebotomy responsibilities, how long they have been performing phlebotomy and their phlebotomy success rate as a percentage.

More information on the preceptor's relationship to the student and the program is available from the SAHP Distance Education office.

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## The Grading System

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The percentage system used to award grades in the Clinical Laboratory Science Program is as follows. Additionally, the quality points are calculated according to the system below:

<u>Grade</u>	<u>Percentage</u>	<u>Quality Points</u>	<u>Other Grades</u>
A+	97.00-100.00	4.00	WP – Withdrew passing
A	93.00-96.99	4.00	WF – Withdrew failing
A-	90.00-92.99	3.67	I – Incomplete
B+	87.00-89.99	3.33	NR – No Report
B	83.00-86.99	3.00	WX – Administrative withdrawal
B-	80.00-82.99	2.67	W – Withdrawal
C+	77.00-79.99	2.33	P – Pass
C	73.00-76.99	2.00	
C-	70.00-72.99	1.67	
D+	67.00-69.99	1.33	
D	63.00-66.99	1.00	
D-	60.00-62.99	0.67	
F	Below 60	0.00	

### Withdrawal

If a student withdraws from a course within the first eight weeks of class, a grade of “W” will be assigned. If a student withdraws from a course after the first eight weeks of class, the instructor must assign a “WP” or a “WF”, based on the definition above. For the tuition refund schedule, see “Tuition Refund Schedule” in the Registration section on page 22.

### Incomplete

Each course must be satisfactorily completed in the semester in which the student was registered for that course or he or she will receive a grade of Incomplete. If a student receives an Incomplete for that course, he or she must complete that course the following semester. If not completed in the second semester, the grade of Incomplete will convert to a “F”, and the student will be subject to probationary action. The student must re-register and repay for the course in order to complete it.

Grades of W, WP, WF, WX, and P are not assigned grade points and therefore are not used in computation of a student’s cumulative GPA.

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## Tuition & Fees – 2009-2010

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### Per Semester Costs:

- \$50 Registration Fee per semester each semester enrolled
- \$75 Technology Fee per semester each semester enrolled
- \$3 Library Fee per credit hour
- \$25 Distance Education Fee per credit hour
- \$50 Distributive Learning Fee per credit hour
- \$200 Tuition per credit hour

### One-Time Costs:

- \$45 Non-refundable application fee submitted with application
- \$100 Academic Records processing fee submitted during final semester in program

Tuition and fee charges are subject to change each summer, as determined by the School of Allied Health Professions and the University of Nebraska Board of Regents.

### Textbooks

Textbooks and course materials are separate expenses that students will pay along with any shipping and handling charges from the online book source each semester. Students are welcome to use any retailer they choose; however, we recommend Amazon.com.

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## Financial Aid Statement

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DAO students are not eligible for financial aid from the University of Nebraska Medical Center or for loan deferrals based on enrollment in the DAO. Some companies and/or local banks may offer continuing education loans to qualified individuals. Additionally, some students may qualify for tuition reimbursement or assistance from their employer. Ultimately, however, it is the responsibility of the student to secure all financial resources.

DAO students will be billed for each semester enrolled, and must pay for the current semester before registration will be permitted for the following semester. Students may be eligible to use a payment plan for paying each semester balance. For a detailed description of the billing process, as well as the payment plan option, see the Payment Process section on page 22.

The Distance Education (DE) office adheres to the policies of each branch of the United States Armed Forces in order to work with active duty military personnel who are eligible for tuition assistance. If a student is eligible for tuition assistance from the military, the student should communicate this with the DE office prior to registering for any coursework.

The Department of Veteran Affairs has approved the Clinical Laboratory Science Program's Degree Advancement Option for VA Benefits. If you qualify for any VA educational benefits, including the Montgomery GI Bill or the Post-9/11 GI Bill, please notify the DE office prior to registering for any coursework.

## II. Student Policies

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### Academic Progress

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The student must achieve a 70% or higher to satisfactorily complete each course. Satisfactory completion of a Level I course is required before enrollment in the corresponding Level II course will be permitted.

Each course must be satisfactorily completed in the semester in which the student was registered for that course or he or she will receive a grade of Incomplete. If a student receives an Incomplete for that course, he or she must complete that course the following semester. If not completed in the second semester, the grade of Incomplete will convert to a "F", and the student will be subject to probationary action. The student must re-register and repay for the course in order to complete it. If a student habitually receives an Incomplete, requiring the following semester to complete the course, the student may be subject to an administrative fee.

**Students must communicate with their faculty advisor at least monthly.** This communication may include questions, concerns, email correspondence, or notification of completed assignments. Failure to communicate at least monthly may result in academic restrictions including administrative hold or non-academic probation.

Students have five years to complete the program.

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### Leave of Absence (LOA)

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A leave of absence (LOA) under exceptional circumstances may be required by the program administration or requested by the student for a limited time. Any such leave of absence shall be solely within the discretion of the program administration, based upon the circumstances, and evaluated on a case-by-case basis. Students must complete an LOA form before a Leave of Absence will be approved.

1. Reasons for the LOA may include, but are not limited to, excessive delays in completion of coursework due to health, personal, or family circumstances (See the Policies/Procedure Manual for the Clinical Laboratory Science Program #SA 2.2). Proper medical documentation will be required if appropriate.
2. A LOA halts progression within the curriculum but does not excuse the student from any current course requirements.
3. The student is responsible for initiating determination of the financial consequences of a leave of absence. Students remain responsible for any unpaid balance on their UNMC account. Failure to meet your financial responsibility may result in dismissal from the program.
4. Students who are on a LOA are responsible for notifying their faculty advisor, in writing, of their intention to return to classes no later than the date specified on the LOA form. Failure to do so may result in dismissal from the program. Re-entry into the CLS program would require reapplication through the usual admissions process, with no guarantee of re-admission.

## II. Student Policies – Leave of Absence continued

5. Upon resumption of the program, a student may be required to meet additional conditions (e.g. documentation of remedial academic work) prior to resuming enrollment in the program. Proper medical documentation will be required, if appropriate, before the student is allowed to return from the LOA.
6. Upon re-enrollment following a LOA, the student will be subject to all policies and curriculum requirements which pertain to the class he or she is joining. If the student was required to take a leave of absence, the student may be subject to probation during the semester of return.
7. The student may be granted a maximum of two semesters of LOA during their enrollment in the program. LOA time will not be counted against the five year time limit to complete the program.
8. Active duty military personnel will be granted a leave of absence in accordance with federal guidelines adhered to by the University of Nebraska Medical Center. Military personnel that are required to use a leave of absence must communicate these orders to their faculty advisor and appropriate program administration prior to taking leave. This includes long-term or short-term leave. Failure to communicate this leave may result in probationary action.

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## Probation

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A student may be placed on academic probation for failure to maintain the minimum requirements in each course as published in the respective course syllabus.

A student may be placed on non-academic probation for failure to comply with the University, the CLS Program, or their own work place policies. Failure to meet communication expectations or satisfactory academic progression policies may result in non-academic probation.

A student will be notified in a conference with a program official (followed by a written memorandum) that they have been placed on probation. The conference and subsequent memoranda should indicate the reasons for probation and the plan recommended to the student for correction of deficiencies. A copy of the memorandum will be forwarded to the Associate Dean of the School of Allied Health Professions.

A student has the right to appeal probation by using the approved grievance procedures established by the University of Nebraska Medical Center. The student is entitled to see their personal file and make copies of any documents that they consider important. (See the Policy/Procedure Manual from the Clinical Laboratory Science Program #SA 11.0.)

Probationary status may be rescinded when the deficiencies are removed to the satisfaction of the program officials.

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## Dismissal

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The faculty of the Clinical Laboratory Science Program reserve the right to dismiss, at any time, a student whose academic integrity or professional conduct make it inadvisable to retain the student in the program. An example of inappropriate academic integrity includes cheating or plagiarism. An example of unprofessional conduct includes unsafe clinical practices, falsified documents or statements. These are examples only and are not inclusive of all potential unprofessional behaviors.

A student may be subject to **academic** dismissal for:

1. Failure to achieve 70% in Student Lab, Rotation I, or Rotation II, according to the requirements described in the respective course syllabus.
2. Dishonesty and/or plagiarism on a written assignment or examination, a laboratory test, or a laboratory report.

A student may be subject to **non-academic** dismissal for failure to comply with University, CLS Program, or the student's workplace regulations or policies.

A student will be notified in a conference with program officials that a recommendation for dismissal has been forwarded to the Associate Dean of the School of Allied Health Professions. The Associate Dean will then notify the student of his/her dismissal in writing, sent by certified mail.

A student has the right to appeal dismissal action by using the approved grievance procedures established by the University of Nebraska Medical Center. A student is entitled to see their personal file and make copies of any documents that they consider important. (See Policy/Procedure Manual from the Clinical Laboratory Science Program, SA 11.0)

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## General Procedures for Student Disciplinary Actions

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In accordance with Section 5.4 of the Bylaws of the Board of Regents and in order to ensure the protection of the student's rights, the University of Nebraska Medical Center has established general procedures that must be followed if any disciplinary action is proposed against a student. Students will be informed in writing by the Office of the Dean of the specific charges, the supporting evidence, and the proposed disciplinary action. The Office of the Dean will also inform students of their right to appeal. The UNMC "Procedural Rules Relating to Student Discipline" may be found in the UNMC Student Policy Handbook.

### III. Student Services Procedures

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#### Accepted Students

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The School of Allied Health Professions (SAHP) Distance Education Office will provide all student services to DAO students. All communications must be directed to the SAHP Distance Education office staff and administration.

All new students will be required to submit a copy of a photo ID to the program for identity verification purposes. Valid photo identification includes:

- Current U.S. driver's license;
- Current state-issued nondriver identification card
- Current U.S. passport
- Current U.S. Military photo identification card

\*Please note that any forms of identification that are expired will not be accepted.

#### New Students

Once a student has been accepted into the program, he or she will receive an acceptance email to his or her personal email address from the Director of SAHP Distance Education. After the official acceptance email has been sent, the student will receive four more emails. The first email will be from the Student Services staff in the SAHP Distance Education office. This email will include a new student information packet with information that students will need to begin their program of study.

Additionally, new students will receive an email from their faculty advisor. This email will contain information on creating a plan of study. For more information, see the Individual Plan of Study section below.

Finally, new students will receive two emails from our Information Technology (IT) department. The first email will contain the user name for a UNMC lotus notes email account. The second email will contain the password with which to log in.

#### Individual Plan of Study

New students will be assigned a faculty advisor, with whom they will create an Individual Plan of Study, or IPS. The IPS includes the core curriculum of the Clinical Laboratory Science Program, and tailors the students' clinical and educational background with their professional goals. Once a student has been accepted into the program, the faculty advisor will contact the student via email with instructions for creating the plan of study.

Together with the advisor, students will develop a schedule for their classes, based on the pace at which they want to complete the program of study, as well as any outside obligations each student may have, including work, family, and other events requiring their time. The IPS is intended to be a guide for students as they complete their program, but it can be modified as necessary.

### III. Student Services Procedures – Individual Plan of Study continued

#### Lotus Notes Email

Upon acceptance, students will receive a UNMC lotus notes email account, which you will be required to use as a student for all communications with faculty, administration, staff, and other students. For security purposes, we will not communicate with students through a personal email address once the lotus notes account has been created. Email is the primary way that the program will communicate with all students. **For this reason, every student is expected to check their email at least every three days so as not to miss important communications.** Exceptions will not be made if a student misses a deadline for failure to read an electronic communication.

Students will receive two emails from our IT department to the personal email address entered on the student application for acceptance. The first email will include the user name for the lotus notes email account. The second email will contain the temporary password for the initial login. Students should change their password after the initial login. Instructions for doing this will be included in the email from IT.

To access your lotus notes email account, go to <http://unmcnotes02.unmc.edu>. You can also access your email from Blackboard in the *Hot Links* tool box.

#### Blackboard® Course Management System

DAO students will access their coursework online through the UNMC Blackboard Course Management System (Bb). Students must use their Lotus Notes user name and password to access Bb. Students should log into their courses at least every three days so as not to miss important communications regarding the course.

Once students have completed registration each semester, the faculty advisor will enroll students into their classes in Bb. The advisor will work with the student to determine which course the student will begin first. The advisor will only make available the course in which the student is currently working. No new courses will be opened until the student completes the previous course. Students should contact their advisor if they cannot access the courses they need in Bb.

Students may receive permission from their employers to use work resources to access program materials (i.e., computer and internet access for courses on Bb). However, students may still want to consider getting a personal Internet Service Provider (ISP) as a backup or for home use. We have experienced some problems (such as inability to send email and problems sending/receiving file attachments) with organizations using security “firewalls”, particularly the military and healthcare organizations.

To access Blackboard (Bb), go to <http://my8.unmc.edu>.

## **DEDUIS Student Information System**

The system name is DEDUIS – Distance **EDU**cation Information **S**ystem. Students will be able to login into DEDUIS with their lotus notes user name and password. Within DEDUIS, students will find their class schedule, billing statement, grades reports, unofficial transcript, and personal information. Students should use this system to pay their bill, update their address, apply to use VA benefits (if applicable), and apply for their degree at the completion of the program. Additionally, there are links to student information documents such as the UNMC student handbook, UNMC academic calendar, and UNMC commencement website. Students will also find free software downloads for McAfee Virus Protection.

To access DEDUIS, go to <https://net.unmc.edu/deduis>.

## **Library Access**

The Leon S. McGoogan Library of Medicine at the University of Nebraska Medical Center is one of the major biomedical resource libraries in the country. All UNMC students have access to one of the most complete medical libraries in the Midwest. A competent staff of librarians is available for consultation and information regarding how to do computerized literature searches and information retrieval, and electronic access to resources. All students pay a library fee each semester in order to receive full access to library services.

The librarians have created a guide for distance students. To view the Distance Education Library Information page, go to <http://unmc.libguides.com/distance>.

## **Counseling Services**

Academic counseling can be arranged as needed. For more information on counseling services at UNMC, please contact the SAHP Distance Education Office.

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## **Orientation**

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The week before classes begin each semester is dedicated to Orientation for our new students. In an effort to orient students to Blackboard (Bb), our online course management system, and to the program, we have created an orientation course for new students. Included in this course is information on how to use basic features in Bb as well as program information, such as contact information, policies and procedures, and frequently asked questions.

Instructions on accessing the course will be sent to students via email. Students are not charged for this course, nor are they assigned a letter grade. However, students **MUST** successfully complete the course before they will be allowed to start any other coursework. The course should not take students more than a couple of days to complete (hours if done in one sitting). Students will have access to the course throughout their time in the program so that they can refer back to any information that is available in the course.

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## Registration

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DAO students register for courses on a semester basis. The CLS DAO is comprised of two semesters – Summer/Fall and Spring. The Summer/Fall semester begins in July and runs through December. The Spring semester begins in January and runs through June. Registration for each semester takes places approximately 3-4 weeks prior to the first day of class.

Once the faculty advisor has approved the student's plan of study, the advisor will provide the Student Services staff with a copy. The staff will use that plan of study to register the student for classes in DEDUIS – students DO NOT register themselves. Once the registration is complete, students will receive a confirmation email, at which time students may login to DEDUIS to verify their semester schedule.

### Adding/Dropping Courses

Students may change their registration with advisor approval after the start of the semester. Students should contact their advisor to change their plan of study, and the advisor will contact Student Services. If further instructions are needed, the student will be contacted by Student Services to confirm the change.

Please see the Academic Calendar on page 3 for the ADD / DROP dates for this academic year, or refer to the schedule below. Students will not be able to add or drop a course after the deadline dates have past.

1. Courses may be added through the first six school days after the first day of class for that term.
2. Courses may be dropped through the first eight weeks after the first day of class for that term.
  - a. Courses dropped before the end of the sixth day school day of class are not entered on the permanent record.
  - b. A “W” (Withdrew) entry is made on the permanent record for a student who drops a course before the end of the eight-week period (see schedule below).
  - c. The grade of “WP” (Withdrew Passing) or “WF” (Withdrew Failing) as assigned by the instructor for the class is entered on the permanent record for a course dropped after the eight-week drop period.

### Summer/Fall 2009

Last Day to ADD Classes .....	July 13
Last Day to DROP Classes .....	August 28

### Spring 2010

Last Day to ADD Classes .....	January 18
Last Day to DROP Classes .....	March 5

## Tuition Refund Schedule

Students who withdraw or drop a course are not relieved from the payment of the balance due. Refunds will be applied first to unpaid balances. Any remaining balance or obligation to any University service must be paid. Failure to do so may prevent registration for future semesters or sessions. NOTE: Refunds are not made for fees.

Refunds are figured from the official beginning of a semester or term as stated in the academic calendar for the student's program in the DAO handbook. Please see the refund schedule below that will be used for each semester:

<b>Period of Drop / Withdrawal</b>	<b>% Refunded</b>	<b>% Chargeable</b>
Before first official day of semester	100%	0%
First Week of the semester	100%	0%
Second Week of the semester	75%	25%
Third Week of the semester	50%	50%
Fourth Week of the semester	25%	75%
Fifth Week of the semester	0%	100%

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## Payment Process

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DAO students are not eligible for financial aid from the University of Nebraska Medical Center or for loan deferrals based on enrollment in the DAO. Some companies and/or local banks may offer continuing education loans to qualified individuals. Additionally, some students may qualify for tuition reimbursement or assistance from their employer. Ultimately, however, it is the responsibility of the student to secure all financial resources.

Acceptable forms of payment include cash, personal check, money order, cashier's check, MasterCard or Visa.

DAO students will be billed for each semester enrolled, and must complete payment for the current semester before registration will be permitted for the following semester. Students may be eligible to use a payment plan for paying each semester balance. The payment plan option allows students to divide their balance due over several payments, each spaced approximately a month apart. Students are allowed four payments for the Summer/Fall semester, and three payments for the Spring semester.

In order to use a payment plan the following must apply:

- A student must have a balance equal to or greater than \$500 in the Summer/Fall semester or \$400 in the Spring semester;
- A student must be in good financial standing with the Distance Education office;
- A student must sign a "Deferred Tuition Payment" form prior to the first payment due date.

Students who do not meet the above criteria will not be allowed to use a payment plan. Additionally, students who have not paid their previous bill in a timely manner or without issue may not be eligible to use a payment plan. See "Delinquent Payments" for further details on this topic.

### III. Student Services Procedures – Payment Process continued

The Distance Education (DE) office adheres to the policies of each branch of the United States Armed Forces in order to work with active duty military personnel who are eligible for tuition assistance. If a student is eligible for tuition assistance from the military, the student should communicate this with the DE office prior to registering for any coursework.

The Department of Veteran Affairs has approved the Clinical Laboratory Science Program's Degree Advancement Option for VA Benefits. If you qualify for any VA educational benefits, including the Montgomery GI Bill or the Post-9/11 GI Bill, please notify the DE office prior to registering for any coursework.

The billing statement that is provided must be kept for tax purposes, as well as a receipt for employers, loan companies, etc. IRS 1098T forms will NOT be provided to students, but the billing statements can be used as a receipt for tuition and fees paid.

#### **Delinquent Payments**

The initial billing statement is available online on the tenth day of the term. The due date for the term is always the fourth Friday of the semester.

If payment is not received, and/or a formal payment agreement\* has not been signed by the student to pay tuition/fees, a \$35 late fee will be assessed. An email notification will be sent to remind the student that he or she has been assessed the late fee and has four days to arrange a payment. If payment is not received, the student will be placed on probation and subject to disenrollment from their coursework. A certified letter will be sent to the student, who will be given ten (10) days to pay the full balance owed.

Students who do not pay their bill by this final deadline will be disenrolled from their coursework, and may be subject to disenrollment from the program. Students who have been disenrolled from coursework will not be able to start classes again until the following semester, even once the bill has been paid. Disenrolled students must pay a \$100 re-enrollment fee to begin courses again, in addition to any tuition, fees, or late charges already owed. **Financial disenrollment is final; an appeals process is not available, no exceptions.**

If a student has signed up for a payment plan and is late on the payment, a \$35 late charge will be assessed, according to the policy above. If the second payment of the payment plan is also late, the late fee will be increased to \$50. If the third payment is also late, the late fee will be increased to \$75. If more than one late fee is assessed to a student during a single semester, the student will be ineligible in the future for the payment plan option. When the next semester begins, the late fee charge will again be set at \$35.

**Insufficient funds:** If a personal check is returned or a credit card payment is declined due to insufficient funds, the individual will be notified by email. Full restitution of the account balance, any late fee charges and an insufficient fund charge of \$35.00 must be received within the time allotted by the Distance Education office. SAHP Distance Education reserves the right to suspend check writing privileges for future UNMC payments should the above situation arise.

### **III. Student Services Procedures continued**

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#### **Leave of Absence**

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A leave of absence (LOA) under exceptional circumstances may be required by the program administration or requested by the student for a limited time. Any such leave of absence shall be solely within the discretion of the program administration, based upon the circumstances, and evaluated on a case-by-case basis. Students must complete a Change of Status form before a Leave of Absence will be approved.

Once an LOA has been approved, the Student Services staff will send the student a Change of Status form. This form must be completed before the LOA will be recorded. The student may be granted a maximum of two semesters of LOA during their enrollment in the program. LOA time will not be counted against the five year time limit to complete the program. Additional information can be found in the Leave of Absence policy.

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#### **Program Withdrawal**

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A student may request a withdrawal from their program of study. Students will be counseled to consider a leave of absence prior to full program withdrawal. Both the faculty advisor and Director of SAHP Distance Education must approve the request. Once a program withdrawal has been approved, the Student Services staff will send the student a Change of Status form. This form must be completed before the Program Withdrawal will be recorded.

A student may return to the program under certain circumstances within one semester of program withdrawal without completing the admissions process again. If a student has exceeded the one semester time limit and wishes to return to their program of study, the student must reapply to the program.

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#### **Degree Completion**

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CLS Degree Advancement Option (DAO) students are only eligible to complete their program of study in the spring semester. Graduates of the CLS program are eligible to sit for the national board exam, MLS(ASCP). As part-time students, DAO students are not eligible to graduate with honors.

#### **Application for Degree**

At the beginning of the final semester, students will receive instructions for completing the application for degree form online in DEDUIS. With the form, students will have to submit a \$100 processing fee. Any student who misses the deadline will not be able to graduate that semester, and must apply the following semester. Any student who applies for their degree but does not graduate must re-apply and pay a \$25 fee the following semester.

## **Convocation & Commencement**

Students are encouraged but not required to attend the Convocation and Commencement ceremonies that are held in Omaha at the end of the final week of the Spring semester. When students submit their application for degree form, they should indicate if they plan to attend these ceremonies.

The School of Allied Health Professions has a Convocation ceremony for all SAHP students. Both the Convocation and Commencement ceremonies require a cap and gown. Instructions for ordering this, as well as further details, are sent to students who indicate they plan to attend.

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## **Access to Student Records**

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In accordance with federal law as established in 1974 by the Family Educational Rights and Privacy Act (FERPA), the University of Nebraska Medical Center maintains the confidentiality of student records and allows students to inspect and review information in their educational records at the University of Nebraska Medical. The UNMC policy statement concerning student records may be found in the current UNMC Student Handbook.

## V. Course Descriptions

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### Prerequisite Course Descriptions

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Prospective students are required to complete Immunology and Genetics as part of their prerequisite course requirements for the program. Some students may have a difficult time finding these courses available at an institution that offers these courses when they need them. For this reason, the University of Nebraska Medical Center has made certain prerequisite courses available online to prospective students. The course descriptions for these courses are below.

#### **CLS 404 Immunology (3 semester hours)**

This online course includes the theory and application of basic concepts in immunology, immunopathology, and immunologic testing methods. Topics of study include the cells, proteins and chemicals involved in the immune system. Immune disorders such as hypersensitivity, autoimmunity, immunodeficiency and protein abnormalities are addressed, as well as transplant and tumor immunology, immunologic testing methods and flow cytometry.

**This course is only offered in the fall and spring semesters.**

**Textbook:** *Immunology* by Thomas Kindt, Barbara Osborne, Richard Goldsby, 6<sup>th</sup> Edition 2006.  
ISBN: [978-1429202114](#)

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#### **SAHP 412 Human Genetics (3 semester hours)**

The course will provide the student with an historical and experimental background to our current understanding of the basis of human genetics. The purpose of the course is to obtain a fundamental understanding of genetic phenomena. This includes the four major sub-divisions of genetics: transmission genetics, which deals with the transmission of genes from generation to generation; molecular genetics, which deals with the structure and function of genes at the molecular level; population genetics, which deals with heredity of groups of individuals for traits that are determined by one or a few genes; and quantitative genetics which deals with heredity of traits in groups of individuals wherein the traits are determined by many genes simultaneously.

Prerequisites: General or molecular biology, general or organic chemistry, or permission of the instructor.

**This course is only offered in the spring semester.**

**Textbook:** *iGenetics: A Molecular Approach* by Peter J. Russell, 2<sup>nd</sup> Edition 2006  
ISBN: [0-8053-4665-1](#)

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## V. Course Descriptions continued

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### CLS Curriculum Course Descriptions

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#### **CLS 412 Clinical Laboratory Science Theory, Application and Correlation (5 semester hours)**

This course includes the application, evaluation and correlation of laboratory procedures used in the diagnosis and treatment of common disease states. Opportunities for building critical thinking, problem solving, and leadership skills are provided in small group clinical case discussions.

**This course must be taken your final semester in the program, and is only offered in the spring semester. It has a definite schedule that must be followed.**

2 Case Study Presentations (21 total) or Lectures (6 total) per week

21 Quizzes

7 Exams

#### **No Additional Textbooks Required**

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#### **CLS 414 Clinical Chemistry (4 semester hours)**

This course includes the introduction to the theory, practical application, technical performance and evaluation of clinical chemistry laboratory procedures. Correlation of clinical laboratory data with the diagnosis and treatment of carbohydrate, renal, liver, cardiac, lipid, protein and pancreatic disorders, as well as acid-base and electrolyte disturbances, is emphasized.

8 Tests

3 Unit Exams

3 Math Exams

**Textbook: *Clinical Chemistry: Techniques, Principles, Correlations (Hardcover)* by Michael L. Bishop, Edward P Fody, Larry E Schoeff, 6<sup>th</sup> Ed., Lippincott Williams & Wilkins, 2009**  
ISBN: [978-0-7817-9045-1](https://www.amazon.com/Clinical-Chemistry-Techniques-Principles-Correlations/dp/9780781790451)

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#### **CLS 415 Advanced Clinical Chemistry (3 semester hours)**

This course incorporates advanced theory, practical application, technical performance and evaluation of clinical chemistry laboratory procedures. Correlation of clinical laboratory data with the diagnosis and treatment of carbohydrate, renal, liver, cardiac, lipid, protein, pancreatic and endocrine disorders, as well as acid-base and electrolyte disturbances is emphasized.

2 Endocrinology Exams

4 Unit Exams

4 Math Exams

**Textbook: Same textbook as CLS 414 Clinical Chemistry**

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## V. Course Descriptions – CLS Curriculum continued

### **CLS 416 Clinical Hematology (4 semester hours)**

This course includes the introduction to the theory, practical application, technical performance and evaluation of hematological and hemostasis procedures. There is an emphasis on the correlation of clinical laboratory data with the diagnosis and treatment of anemia, leukemia, and bleeding/clotting disorders.

5 Tests  
8 Online Worksheets  
8 Exercises  
8 Quizzes  
4 Unit Exams

**Textbook:** *Clinical Laboratory Hematology (Hardcover)*, by Shirlyn B. McKenzie, 2<sup>nd</sup> Ed., Prentice Hall, 2010 ISBN: [978-0-1351-3732-1](#)

**Recommended:** *Clinical Hematology Atlas (Spiral Bound)* by Jacqueline Carr, Bernadette Rodak, 3<sup>rd</sup> Ed., Saunders Elsevier, 2008 ISBN: [978-1-4160-5039-1](#)

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### **CLS 417 Advanced Clinical Hematology (3 semester hours)**

This course incorporates advanced theory, practical application, technical performance and evaluation of hematological and hemostasis procedures. There is an emphasis on the correlation of clinical laboratory data with the diagnosis and treatment of anemia, leukemia, and bleeding/clotting disorders.

4 Exercises  
4 Unit Exams

**Textbook:** Same textbook as CLS 416 Clinical Hematology

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### **CLS 418 Clinical Microbiology (4 semester hours)**

This course includes the introduction to the theory, practical application, technical performance and evaluation of procedures for isolation, identification and susceptibility testing of infectious disease organisms in humans. This course focuses on bacteriology, and emphasizes the correlation of clinical laboratory data with the patient's diagnosis and treatment.

3 Tests  
3 Quizzes  
5 Unit Exams  
3 Lab Practicals  
1 Technical Evaluation

**Textbook:** *Textbook of Diagnostic Microbiology (Hardcover)* by Connie Mahon, George Manuselis, 3<sup>rd</sup> Ed., Saunders Elsevier, 2007 ISBN: [978-1-4160-2581-8](#)

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### **CLS 419 Advanced Clinical Microbiology (3 semester hours)**

This course incorporates advanced theory, practical application, technical performance and evaluation of procedures for isolation, identification and susceptibility testing of infectious disease organisms in humans. This course includes bacteriology, mycology, parasitology, virology and serology, and emphasizes the correlation of clinical laboratory data with the patient's diagnosis and treatment.

8 Unit Exams  
1 Serology-Hepatitis Quiz  
Parasitology and Mycology Modules with Exams

**Textbook:** Same textbook as CLS 418 Clinical Microbiology

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## V. Course Descriptions – CLS Curriculum continued

### **CLS 420 Clinical Immunology and Molecular Diagnostics (1 semester hour)**

This course includes the theory, practical application, and evaluation of immunological components, principles and methodologies used in the assessment of immunologically related disorders, including hypersensitivity reactions, autoimmune, immunoproliferative and immunodeficiency disorders. Theory and application of molecular diagnostic tools, such as polymerase chain reaction (PCR), nucleic acid probes, and microarrays are also addressed.

**This course is only offered in the fall semester and must be taken before CLS 431. It has a definite schedule that must be followed.**

1 Test  
1 Lecture Series Exam  
2 Lecture Papers  
1 Research Paper, with 5 revision stages  
Molecular Diagnostics Module, with paper

**Textbook: *Clinical Immunology and Serology: A Laboratory Perspective (Paperback)* by Christine Dorresteyn Stevens, 3<sup>rd</sup> Ed., F.A. Davis ISBN: TBA – released in August/September 2009**

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### **CLS 422 Clinical Immunohematology (3 semester hours)**

This course includes the introduction to the theory, practical application, technical performance and evaluation of immunohematology procedures required for transfusion of blood and blood components, management of Hemolytic Disease of the Fetus and Newborn and for handling and storage of blood and blood components.

3 Homework Worksheets  
1 Theory Test  
1 Practical Application Test  
3 Unit Exams  
1 Practical Application Exam  
15 Quizzes

**Textbook: *Modern Blood Banking and Transfusion Practices (Hardcover)* by [Denise M. Harmening](#), 5<sup>th</sup> Ed., F.A. Davis, 2005 ISBN: [978-0-8036-1248-8](#)**

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### **CLS 423 Advanced Clinical Immunohematology (2 semester hours)**

This course incorporated advanced theory, practical application, technical performance and evaluation of immunohematology procedures required for transfusion of blood and blood components and for handling and storage of blood and blood components.

3 Unit Exams  
1 Practical Application Exam  
9 Quizzes

**Textbook: Same textbook as CLS 422 Clinical Immunohematology**

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### **CLS 424 Phlebotomy (1 semester hour)**

This course includes the theory, practical application, technical performance and evaluation of procedures used in collecting, handling and processing blood specimens.

8 Online Worksheets  
1 Final Exam

**Textbook: *Phlebotomy Essentials (Paperback)* by Ruth E McCall, Cathee M. Tankersley, 4<sup>th</sup> Ed., Lippincott Williams & Wilkins, 2008 ISBN: [978-0-7817-6138-3](#)**

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## V. Course Descriptions – CLS Curriculum continued

### CLS 426 Urine and Body Fluid Analysis (1 semester hour)

This course includes the theory, practical application, technical performance and evaluation of procedures used in the analysis of urine and other body fluids, including cerebrospinal, synovial, serous, seminal, amniotic and feces.

2 UA Tests	1 Amniotic Fluid Worksheet
1 UA Picture ID Quiz	1 Semen Analysis Worksheet
3 Homework assignments	1 Body Fluid Written Exam
2 UA Written Exams	1 Body Fluid ID Exam
1 UA Sediment ID Exam	
1 UA Data Correlation Exam	

**Textbook:** *Fundamentals of Urine & Body Fluid Analysis (Paperback)* by Nancy A. Brunzel, 2<sup>nd</sup> Ed., Saunders, 2004 ISBN: [978-0-7216-0178-6](https://www.amazon.com/dp/9780721601786)

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### CLS 430 Clinical Laboratory Management (2 semester hours)

This course includes the theory, practical application, and evaluation of laboratory management principles and associated models in healthcare systems, communication, educational methodology, quality control, ethics and compliance and regulatory issues. Opportunities for building critical thinking, problem-solving, and management and professional leadership skills are provided.

**This course is only offered in the fall semester and has a definite schedule that must be followed.**

10 Assignment Activities  
2 Papers

**No Textbook Required**

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### CLS 431 Clinical Laboratory Management (3 semester hours)

This course, a continuation of Clinical Laboratory Management I, includes the theory, practical application, and evaluation of laboratory management principles and associated models in compliance and regulatory issues, human resource management, written and oral communication, method evaluation, educational methodology, professionalism, test utilization, laboratory quality and financial resources. Opportunities for building critical thinking, problem-solving, writing and management and professional leadership skills are provided.

**This course is only offered in the spring semester and has a definite schedule that must be followed.**

17 Assignment Activities  
5 Papers  
2 Papers, with revision process  
2 Presentations

**No Textbook Required**

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## NOTICE

Acceptance of registration by the University of Nebraska and admission to any educational program of the university does not constitute or warranty that the university will continue indefinitely to offer the program in which a student is enrolled. The university expressly reserves the right to change, phase out, or discontinue any program.

The listing of courses contained in any university bulletin, catalog, or schedule is by way of announcement only and shall not be regarded as an offer of contract. The university expressly reserves the right to (1) add or delete courses from its offerings, (2) change times or locations of courses or programs, (3) change academic calendars without notice, (4) cancel any course for insufficient registrations, or degrees and any other policy or regulation affecting students, including, but not limited to, evaluation standards, whenever the same is considered to be in the best interests of the University.

*Effective: June 8, 1985 Board of Regents.*