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**Calumet College**

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*Calumet College of St. Joseph is a Catholic institution of higher learning dedicated to the academic, spiritual and ethical development of undergraduate and graduate students. Informed by the values of its founding religious community, the Missionaries of the Precious Blood (C.P.P.S.), the College promotes the inherent dignity of all people, social justice, an ethic of service, student empowerment, opportunity, and lifelong learning.*

*We are committed to the Five Pillars of a CCSJ Education: The CCSJ graduate will be Open to Growth, Intellectually Competent, Religious, Loving, and Committed to Doing Justice. This class, as outlined below, will help you to achieve those goals.*

## **COURSE SYLLABUS, Fall 2019**

<b>Course: BIOL 115L-A1 Cell and Evolution-Laboratory</b>
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<b>Instructor Information:</b>	
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<b>Instructor Name</b>	Dr. Edward Draper
<b>Office Number:</b>	514
<b>Phone Number:</b>	219-473-4268
<b>Email:</b>	edraper@ccsj.edu
<b>Office Hours:</b>	Wednesday 12:00-1:30, Thursday 10:15-11:45, Friday 10:15-12:00
<b>Instructor Background:</b>	B.S. in Biology from Loyola University Chicago. M.S. in Biology from Purdue University. Ph.D. in Biology from University of Illinois Chicago. My research focuses on using the yeast, <i>Saccharomyces cerevisiae</i> , as a model system to study cellular biology.

<b>Course Information:</b>	
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<b>Course Time:</b>	Tuesday 12:00-1:30
<b>Classroom:</b>	336
<b>Prerequisites:</b>	MATH 103 or higher and concurrent enrollment in BIOL 115 Lecture
<b>Required Books and Materials:</b>	Laboratory handouts will be provided on Black Board
<b>Learning Outcomes/ Competencies:</b> Students in this course will:	
<ul style="list-style-type: none"><li>• Identify the overall structures and cellular functions of the four classes of macromolecules: lipids, carbohydrates, proteins, and nucleic acids</li><li>• Describe structure-function relationships found in cellular structures and processes</li><li>• Compare and contrast prokaryotes and eukaryotes in terms of cellular structures, organization, and life processes</li></ul>	

- Describe cellular processes used to create energy
- Demonstrate the flow of information in cells
- Describe biological fundamentals of current issues in biotechnology (such as cloning, DNA fingerprinting, gene therapy, and stem cell research)
- Develop and defend hypotheses related to cellular processes and molecular biology
- Design and execute simple experiments with appropriate controls

This course meets the following learning objectives for the Biomedical Science Program:

- Students will demonstrate substantial and up-to-date core knowledge of broad areas in basic biomedical, translational, or clinical research.
- Students will demonstrate the ability to accurately and critically evaluate their own scientific work and the work of others.
- Students will demonstrate advanced understanding of a range of technical and conceptual approaches used in biomedical research.
- Students will demonstrate the oral, written and media communication skills required to be effective communicants, teachers and mentors of peers, future scientists and scientifically literate citizens.
- Students will improve their confidence and interactions with colleagues and the public.
- Students will be able to advocate for the role of science in medicine and society.

The course also meets the following General Education Program objectives:

- Students will read analytically, synthetically, and critically in a variety of genres.
- Students will write in a variety of forms using valid logic, persuasive rhetoric, and correct grammar, usage, and punctuation.
- Students will represent, apply, analyze, and evaluate relevant qualitative and quantitative mathematical and scientific evidence (i.e. equations, graphs, diagrams, tables, words) to support or refute an argument.
- Students will appreciate, create, and critique the persuasive power of art and media.
- Students will be able to apply ethical standards to social issues and analyze their own core beliefs and the origin of these beliefs.

**Course Description:** A 3-credit hour class. Introduction to biological concepts, including origins of life, biochemical principles, energetics, cellular organization, mechanisms of heredity, and evolution. Students will explore unifying concepts in biological science while developing key investigative skills necessary for scientific exploration and hypothesis testing. Includes laboratory.

**Learning Strategies:** Active learning, BlackBoard, group discussions, team projects, collaborative learning, laboratory exercises, demonstrations.

**Experiential Learning Opportunities:** Laboratory experience is essential for a fundamental understanding of the scientific method. This course has a required laboratory portion that provides students with experiential learning through experimental design, hypothesis development, data interpretation, and communication of results through laboratory reports.

<b>Assessments:</b>		
<b>Laboratory Assignments:</b>	Answer questions in each of the 12 labs. Due at the beginning of the next lab meeting	30 points each
<b>Laboratory Reports:</b>	Write lab reports for the 2 labs in bold on the course schedule. Due dates are indicated on the course schedule.	30 points each
<b>Class Participation:</b>	Attend 15 scheduled laboratory sessions	3 points each
<b>Total</b>		465
<b>Grading Scale (points):</b>		
A: 416-465	C+: 358-368	D: 276-310
B+: 404-415	C: 323-357	F: 275 & under
B: 369-403	D+: 311-322	

### **Course Schedule:**

Class Date	Class Activity
Aug. 27	Syllabus, Lab Safety, Lab Reports, Micropipette Video
Sept. 3	Measurement and Metric System
Sept. 10	<b>Statistics (lab report due Sept. 24)</b>
Sept. 17	Microscope
Sept. 24	Cell Structure
Oct. 1	Osmosis
Oct. 8	Enzymes
Oct. 15	<b>Cellular Respiration (lab report due Oct. 29)</b>
Oct. 22	Exam 2 Review
Oct. 29	Mitosis
Nov. 5	Meiosis
Nov. 12	Human Genetics
Nov. 19	Epigenetics
Nov. 26	Thanksgiving Break-No Class
Dec. 3	Biotechnology
Dec. 10	Exam 4 Review

**I reserve the right to change this schedule to meet the needs of the class.**

<b>Responsibilities</b>	
<b>Attending Class</b>	<p>You cannot succeed in this class if you do not attend. We believe that intellectual growth and success in higher education occur through interaction in the classroom and laboratories. Being absent doesn't excuse you from doing class work; you have <b>more</b> responsibilities to keep up and meet the objectives of this course.</p> <p><b>Attendance</b> Attendance is counted as being present from the first 10 minutes of class until the end of lecture/lab. Anyone missing after the first 10 minutes of class will be marked late. If you are still missing after the first 15 minutes of class, you will be marked absent unless a written excuse is provided within 24 hours of the occurrence. Similarly, anyone leaving early without a written excuse will be counted as absent.</p> <p><b>General Absences</b> <b>You are responsible for all material presented in class and all in-class announcements and assignments.</b> If for whatever reason you have to miss class, please approach your fellow students for the notes you missed, and take advantage of the class materials that will be posted on Blackboard <a href="http://class.ccsj.edu">http://class.ccsj.edu</a> ALL planned and unplanned absences must be communicated to your instructor via email (Subject: Last name, First name, "BIOL 115A Absent", Date) with a brief explanation.</p> <p>Intellectual growth and success in college is reinforced through interaction in the classroom. Students reach personal goals and course outcomes through regular and prompt attendance. Therefore, three (3) unexcused absences will result in an administrative withdrawal from the course. Furthermore, excessive tardiness (every 2 late arrivals) will result in 1 absence. The student may be subjected to a grade of F or FW per the policy stated under the Withdrawal from Classes section on this syllabus.</p> <p><b>Absence due to college events</b> We do not want to penalize students for participating in college-sponsored events. When you miss class because of a college event, you must give notice of your absence 24 hours in advance according to the communication guidelines above, and you are responsible for all missed work. Being absent doesn't excuse you from doing class work; you have more responsibilities to keep up and meet the objectives of this course.</p> <p><b>Missed labs cannot be made up.</b> With permission of the instructor, a student will be allowed to attend another lab section during the same week as the lab that the student missed/will miss.</p>
<b>Turning In Your Work</b>	<p>You cannot succeed in this class if you do not turn in all your work when due. <b>Homework will not be accepted after the due date.</b> Extension requests for extenuating circumstances can be submitted via email to the instructor. Decisions on make-up work are left to the discretion of the instructor.</p>

<b>Meeting Standards for Classroom Behavior</b>	<ul style="list-style-type: none"> <li>• <b>Use all the class time.</b> Come to class on time and stay in class until the end. Coming late, leaving early, and getting up during class disrupts the class and disrespects others.</li> <li>• <b>Come prepared.</b> Bring your texts, be prepared to take notes, and be able to demonstrate that you have completed the assignments for the day through your participation in class.</li> <li>• <b>Respect others.</b> Listen when your classmates and the instructor are speaking. Think about their contributions. Respond appropriately.</li> <li>• <b>Use electronic devices only for class purposes.</b> Engage with your classmates and the instructor without technological distractions.</li> </ul>
<b>CCSJ Student Honor Code</b>	<p>This course asks students to reaffirm the CCSJ Student Honor Code:</p> <p>I, as a student member of the Calumet College academic community, in accordance with the college's mission and in a spirit of mutual respect, pledge to:</p> <ul style="list-style-type: none"> <li>• Continuously embrace <b>honesty and curiosity</b> in the pursuit of my educational goals;</li> <li>• Avoid all behaviors that could impede or distract from the academic progress of myself or other members of my <b>community</b>;</li> <li>• Do my own work with <b>integrity</b> at all times, in accordance with syllabi, and without giving or receiving inappropriate aid;</li> <li>• Do my utmost to act with commitment, inside and outside of class, to the goals and <b>mission</b> of Calumet College of St. Joseph.</li> </ul>
<b>Doing Your Own Work</b>	<p>If you turn in work that is not your own, you will be subject to judicial review by the Faculty-Student Grievance Committee. These procedures can be found in the Student Planner. The maximum penalty for any form of academic dishonesty is dismissal from the College.</p> <p>Using standard citation guidelines to document sources avoids plagiarism. You'll find guides to the major citation methods at the CCSJ Specker Library Web page at  <a href="http://www.ccsj.edu/library/subjectsplus/subjects/guide.php?subject=cite">http://www.ccsj.edu/library/subjectsplus/subjects/guide.php?subject=cite</a></p> <p><b>PLEASE NOTE:</b> All papers may be electronically checked for plagiarism.</p>
<b>Sharing Your Class Experience</b>	<p>Your voice matters! At the end of the term, you will have the opportunity to evaluate your classroom experience. These confidential surveys are essential to our ongoing efforts to ensure that you have a great experience that leaves you well prepared for your future. Take the time to complete your course evaluations – we value your feedback!</p>
<b>Withdrawing from Class</b>	<p>After the last day established for class changes has passed (see the College calendar in the CCSJ Course Catalog), you may withdraw from a course by following the policy outlined in the Course Catalog.</p>

<b>Resources</b>	
<b>CCSJ Book Rental Program</b>	The CCSJ Book Program ensures that everyone has the right course materials on the first day of class to be successful. You pay a book rental fee each semester, and in return, receive all the materials for all your classes prior to the beginning of classes. At the end of the semester, simply return the books. For traditional students, the Book Rental Program is conveniently located in the library, where students can pick up and return their books. For students in accelerated programs and graduate programs, books will be delivered to their homes and they can return them by mail. For more information, see <a href="http://www.ccsj.edu/bookstore">http://www.ccsj.edu/bookstore</a> . <b>All books must be returned at the end of the semester or you will incur additional fees, which will be charged to your student account.</b>
<b>Student Success Center</b>	The Student Success Center provides faculty tutors at all levels to help you master specific subjects and develop effective learning skills. It is open to all students at no charge. You can contact the Student Success Center at 219 473-4287 or stop by the Library.
<b>Disability Services</b>	Disability Services strives to meet the needs of all students by providing academic services in accordance with Americans with Disabilities Act (ADA) guidelines. If you believe that you need a “reasonable accommodation” because of a disability, contact the Disability Services Coordinator at 219-473-4349.
<b>Student Assistance Program</b>	Through a partnership with <b>Crown Counseling</b> , Calumet College of St. Joseph provides a free Student Assistance Program (SAP) to current students. The SAP is a confidential counseling service provided to students for personal and school concerns which may be interfering with academic performance and/or quality of life. The SAP counselor is available on campus once a week and off-site at the Crown Counseling offices in Crown Point or Hammond. For more information, <b>contact Kerry Knowles SAP Counselor</b> , at 219-663-6353 (office), 219-413-3702 (cell), or <a href="mailto:kerryk@crowncounseling.org">kerryk@crowncounseling.org</a> .
<b>CCSJ Alerts</b>	Calumet College of St. Joseph’s emergency communications system will tell you about emergencies, weather-related closings, or other incidents via text, email, or voice messages. Please sign up for this important service annually on the College’s website at: <a href="http://www.ccsj.edu/alerts/index.html">http://www.ccsj.edu/alerts/index.html</a> .