

Instructor Information

Name	Julie González	E-mail address	jegonzalez2@dmacc.edu
Phone number	(515) 964-6379	Fax number	(515) 965-7083
Office location	Building 4; Room 11A	Office hours	M & W 12:20-2:20pm T & F 1:25-2:25pm
Web page	http://www.dmacc.edu/instructors/jegonzalez2/		

Course Information

Semester	Spring	Year	2009
Course title	Cell & Molecular Biology – Proteins		
Course number	BIO 251 E1	Credits	5 (includes lab)
Section number		CRN number	24554
Days & Time	MW 4:05pm-8:05pm	Location	Ankeny Campus Bld. 4 Room 02

Course description	This course is designed to provide training in techniques related to protein Chemistry and is a requirement for biotechnology majors. The course will focus on processes related to synthesis, control of synthesis and trafficking of proteins within the cell. Protein structure and function will be studied with special emphasis on enzymes and immunoproteins. The study of differential protein expression and regulatory mechanisms will also be included. The lab component of the course will train the student in purification, characterization, handling and storage of proteins, enzyme mechanisms and kinetics, immunoassays and two-dimensional gel electrophoresis.		
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Prerequisites	BIO 104, BIO 250, CHM 132, MAT 157 Pre- or Corequisite: BIO 112		
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Course competencies	http://www.dmacc.edu/competencies/		
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Textbooks & Materials

Required textbooks	<p>Lecture: <u>Molecular Biology of the Cell</u>, 5th ed. by Alberts, et al., Garland Science, 2008</p> <p>Lab: <u>Basic Laboratory Methods for Biotechnology: Textbook and Laboratory Manual</u> 2nd ed. by Seidman and Moore, Pearson, 2009</p> <p><u>Cold Spring Harbor Laboratory Research Notebook</u>, Jones and Bartlett Publishers, Inc.</p>		
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Required materials	Sharpie marker, Basic Calculator (no cell phones)		
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Course Policies

Attendance	<p>Regular attendance is essential for success in this course. Absence and tardiness interfere with the learning process, <i>even if for legitimate reasons</i>.</p> <ul style="list-style-type: none"> • Daily Participation slips will help track attendance. • Repeated tardiness is not acceptable. • If you miss a class <ul style="list-style-type: none"> ○ You are responsible for any material covered and any assignments given. Call a friend, get the assignment, and be prepared for the next class. It is your responsibility to stay caught-up in this course. • Announced and unannounced quizzes and in-class assignments will be given at the instructor's discretion. <ul style="list-style-type: none"> ○ Missed quizzes and in-class assignments <u>cannot</u> be made up this includes missing a quiz due to tardiness.
Grading criteria	<p>Grades will be assigned according to the following scale:</p> <p>100-90 A 89-87 B+ 86-84 B 83-80 B- 79-76 C+ 75-71 C 70-66 C- 65-62 D+ 61-58 D 57-55 D- 0- 54 F</p> <ul style="list-style-type: none"> • Students can keep track of their own grades using returned assignments or they may use the following website, which will be updated prior to the course drop date and finals week, additional updates may also be provided throughout the semester. • Grades may be viewed online at: http://www.eclassinfo.com • This is a secure website which keeps track of grades, assignments and attendance. You will be given an individual <u>Student ID</u> and <u>Password</u> which you need every time you log into the page. The information is private so that only you can view your grades online. <p>If you ever forget, misplace or wish to change your ID and Password contact me.</p>
Classroom conduct	<p>“Students are expected to conduct themselves in such a manner as to show respect for faculty, staff and fellow students, exhibit and maintain integrity and honor in all matters related to the College and not interfere with or disrupt the orderly educational processes of the College.”</p> <p>For additional information refer to the DMACC Student Handbook: http://www.dmacc.edu/handbook/welcome.asp</p>
Instructor Communication	<p>All course information sent to students will be sent to your DMACC e-mail account. If you have not yet set up the account or are unable to access it contact the help desk at 515-965-7300 or 1-800-362-2127, ext. 7300.</p>
Lecture	<p>Attached is a general lecture outline for the course. You are responsible for taking notes and reading the assigned chapters in your textbook. If you miss a class, you will have to get the notes, handouts and find out about any announcements from someone in your class. Lecture exams and a comprehensive final will be administered according to the tentative dates on the outline.</p>
Lab	<p>Attached is a tentative lab schedule. You are required to attend each lab, participate in and complete all activities during the lab period. Failure to be actively involved in lab activities results in a loss of points.</p>

Lab Safety	Laboratory safety is of paramount importance. It is essential that you follow proper procedures at all times. Some of the materials you will be handling are dangerous! No food, drink, tobacco or gum is permitted in the lab. Safety equipment such as a lab coat or smock, safety glasses or goggles and gloves will be required for certain activities. Pay close attention to safety precautions (concerning chemicals, equipment, etc.) as outlined by the instructor during each lab. Ask for the instructor's advice whenever in doubt about the safe handling of lab materials and equipment.
Assignments	<p>Homework will be assigned throughout the semester. These may include (but are not limited to) working problems, brief oral presentations, current literature searches, etc. Specific assignments will be made at appropriate times throughout the course.</p> <ul style="list-style-type: none"> • All work handed in must be neatly and properly done. <ul style="list-style-type: none"> ○ Assignments will not be accepted if they are messy. ○ When writing answers, you must be certain that you have answered all parts of a question. ○ If you do not understand an assignment or a question, it is your responsibility to look for help. <p>You may come to me, go to the tutoring center or ask a friend. But your not understanding something will not be accepted as an excuse for incomplete work.</p>
Late assignments	Missed lab exercises, in class activities and quizzes cannot be made up this includes missing them due to tardiness. Some outside assignments may be accepted up to two in-session days after the due date, the score will be reduced by 30%.
Exams	<p>Lecture examinations will cover the textbook; material presented in lecture, activities and related readings. Each student is responsible for the contents of the textbook and supplemental material unless the instructor specifically desires to omit a certain portion of material.</p> <ul style="list-style-type: none"> • If you know in advance you will miss an exam you may take <u>one</u> exam ahead of time with no penalty. • Only <u>one</u> exam not taken at the scheduled time may be made-up within two weeks; however the <u>overall score is lowered for by 10% for each week the exam is not completed.</u> <ul style="list-style-type: none"> ○ For example, if the exam is taken during the first week a score of 80% will automatically become a score of 70%; the second week a score of 80% will be recorded as a score of 60%. If an examination is not made-up within two weeks of the original exam date, a grade of zero will be given for the missed examination. <p>Each student may choose to take a late exam only once during the semester.</p>
Classroom info	<p>Instructors never <u>give</u> grades the outcome of any course is based on what you <u>earn</u>.</p> <ul style="list-style-type: none"> • The instructor can only add up your earned points and use the grading scheme to reveal the appropriate letter grade. <p>Class cancellations.</p> <ul style="list-style-type: none"> • You will always receive notification of alternate activities and class cancellations. Notice can be given in advance via in-class announcements or e-mail and for unanticipated events a notice will be posted in the classroom.
Study expectations	Learning happens in the minds of individuals. It is not the doing that causes learning; it is the thinking about the doing, the thinking about the experience that causes learning. Therefore, each of you is responsible for your own learning. All experiences and assignments for this course have been designed to promote your acquisition of enduring understandings about the course content. You are not doing any of the assignments for me; you are doing them for yourself. And, you deserve to do high quality work for yourself.

Weather policy	<p>“Individual circumstances such as health, childcare, rural roads, distance from the College, etc. can vary greatly among students and staff. It is always DMACC’s goal to provide safe learning conditions, as well as provide the opportunity for students to attend classes when the vast majority is able to safely attend. The final decision to come to College can only be made by the individual student based on their specific extenuating circumstances that may make it unsafe for them to travel. During adverse weather, DMACC faculty is considerate of students who are unable to attend classes due to unique extenuating circumstances. It is the responsibility of each faculty member to notify their students (in addition to their dean or provost) through some predetermined means if they are must postpone or cancel a specific class due to weather or illness.”</p> <ul style="list-style-type: none"> • If the campus is closed due to inclement weather, check your <u>DMACC email</u> for instructions from me for problems or assignments which will be due for the next class period.
Academic dishonesty	<p>“Academic integrity, doing one’s own work in course assignments and in tests, is one of the most important values in higher education. Receiving credit for plagiarizing or cheating violates the value of all degrees conferred. It is unacceptable for students to submit another person’s work as their own. If students quote, summarize, paraphrase or use an author’s idea, they must acknowledge the source, otherwise they are plagiarizing. Allowing others to accept credit for work not their own in tests or in written and oral reports is also cheating. Students who plagiarize or cheat will be held accountable by their instructor and are subject to the sanctions.”</p> <ul style="list-style-type: none"> • All incidences of academic dishonesty, based on my perception, will be reported to the college. During this course the first offence will result in a 0 for the work and the second offence will result in an F for the course. Severe offences may result in an immediate F for the course. <p>For additional information refer to the DMACC Student Handbook: http://www.dmacc.edu/handbook/welcome.asp</p>
DMACC Information Web Sites	
DMACC home page	http://www.dmacc.edu/
Instructor home pages	http://www.dmacc.edu/instructors/jegonzalez2/
Admissions & registration	http://www.dmacc.edu/potenti.asp
Cellular phone use statement	http://www.dmacc.edu/student_services/cellphone.asp
WebCT	http://webct.dmacc.edu/webct/public/home.pl
Student handbook	http://www.dmacc.edu/handbook/welcome.asp
Add/drop dates	http://www.dmacc.edu/registration/add_drop.asp
Refund policy	http://www.dmacc.edu/refund.asp
Support Services	
Accommodations	<p>“It is the policy of DMACC to accommodate students with disabilities. Any student with a documented disability who requires reasonable accommodation should contact the special needs coordinator at 515-964-6850 voice or 515-964-6810 TTY.”</p>
Services for students with disabilities	<p>http://www.dmacc.edu/student_services/disabilities.asp</p> <p>Contact the special needs coordinator at 515-964-6850V, 515-964-6809 TTY or the counseling & advising office on any campus for an Application for Accommodation.</p>
Academic & educational advising	http://www.dmacc.edu/advising/welcome.asp
Career counseling	http://www.dmacc.edu/counseling/

Library	http://www.library.dmacc.edu/ Building 6, room 3 Monday – Thursday 7:30 am to 9:00 pm Friday – 7:30 am to 4:00 pm Saturday – 8:00 am to 1:00 pm
Academic Achievement Center	http://www.dmacc.edu/student_services/academic_achievement_center.asp Provides academic assistance for students on a drop-in basis. Also serves as a make-up testing center. 515-964-6558 or 1-800-362-2127 ext. 6558 Building 6, Room 20 Monday – Thursday 8:00 am to 7:00 pm Friday – 8:00 am to 2:30 pm NOTE: Summer hours may vary
Online Tutoring	SMARTHINKING Online Tutoring at DMACC!!  <i>Don't forget DMACC's free on-line tutoring service that you can log on to at any time!</i> Smarthinking provides tutoring in a variety of subjects. You can connect with an e-structor and interact with a live tutor, submit your writing for any class to their Online Writing Lab, and submit a question and receive a reply from a tutor. For more information go to http://www.dmacc.edu/smarthinking.asp . Contact the DMACC Tutoring Office (Monday-Friday from 8:00 a.m. – 4:00 p.m.) at 515-964-7004 or 1-800-362-2127 ext. 7004 or email at tutor@dmacc.edu and receive a DMACC SMARTHINKING user ID and Password. Your SMARTHINKING account will allow a maximum usage of 140 minutes per semester. Your password will be valid for one semester. For further information contact Sharon Bittner, Program Development Director, at sgbittner@dmacc.edu
Computer labs	http://www.dmacc.edu/helpdesk/pc_labs.htm Building 6 Monday – Thursday 7:30 am to 10:00 pm Friday – 7:30 am to 4:00 pm Saturday – 7:30 am to 1:00 pm
Disclaimer “This syllabus is representative of materials that will be covered in this class; it is not a contract between the student and the institution. It is subject to change without notice. Any potential exceptions to stated policies and requirements will be addressed on an individual basis, and only for reasons that meet specific requirements. If you have any problems related to this class, please feel free to discuss them with me.”	
Nondiscrimination Policy Des Moines Area Community College shall not engage in or allow discrimination covered by law. This includes harassment based on race, color, national origin, creed, religion, gender, sexual orientation, age, and disability. Veteran status in educational programs, activities, employment practices, or admission procedures is also included to the extent covered by law. Individuals who believe they have been discriminated against may file a complaint through the College Discrimination Complaint Procedures. Complaint forms may be obtained from the DMACC Web site, the Ombudsperson, Judicial Officer, Human Resources Department, the campus Provost's Offices, and Academic Deans' Offices. Students who wish additional information or assistance may contact the Executive Dean, Student Services, Laurie Wolf, Building 1, 515-964-6437 or the EEO/AA Officer, Dr. Sandy Tryon, Human Resources, Bldg. 1, 515-964-6301 or they may refer to Student Services procedure 4645 located on the DMACC Intranet at http://my.dmacc.edu/procs.aspx . Go to Policies & Procedures and choose Student Services Procedures. Employees and applicants who wish additional information or assistance may contact the EEO/AA Officer, Dr. Sandy Tryon, Human Resources, Bldg. 1, 515-964-6301 or refer to HR Procedures 3000, 3005, 3010, 3015, and 3020 at http://www.dmacc.edu/hr/hrpp.asp . For requests for accommodations, the Accommodation/Section 504/ADA Coordinator, Sharon Bittner, can be contacted at 515-964-6857. Students with requests for accommodations should refer to the Student Services procedure 4610 located on the DMACC Intranet at http://my.dmacc.edu/default.aspx . Go to Policies & Procedures and choose Student Services Procedures.	

				Cell & Molecular Bio. Monday & Wednesday 4:05-8:05 Tentative Lecture Schedule for Spring 2009	3rd ed.
Lecture					
Week	Date	Day	Unit	Topic	Chapter
1	Jan 12	M	1	Amino Acid Chemistry	The material for most topics will be spread out in small sections across several chapters. Handouts will be given in class for each unit listing specific chapters and pages.
	14	W		Protein structure	
2	19	M		Holiday - No Class	
	21	W		Cellular functions of proteins	
3	26	M	2	Unit 1 Exam	
	28	W		Methods for characterizing proteins and protein solutions	
4	Feb 2	M		Protein synthesis within cells	
	4	W		Protein modifications within eukaryotic cells	
5	9	M		Protein targeting and trafficking within the cell	
	11	W			
6	16	M	3	Unit 2 Exam	
	18	W		Enzyme mechanisms	
7	23	M		Metabolic pathways	
	25	W			
8	Mar 2	M		Basic enzyme kinetics	
	4	W			
9	9	M		Regulation of enzyme activity	
	11*	W			
10	23*	M	4	Unit 3 Exam	
	25	W		Immunoproteins	
11	30	M		Monoclonal vs. polyclonal antibodies	
	Apr 1	W		Immunoassays	
12	6	M	5	Unit 4 Exam	
	8	W		Regulation of cellular protein synthesis	
13	13	M		Mechanisms of cellular response	
	15	W			
14	20	M		Protein expression during cell specialization	
	22	W		Stress responses in cells	
15	27	M		Student Presentations	
	29	W		Final Exam Review	
16	FINAL			Comprehensive Final Exam (May 6th 4:05-6:20pm)	

This is the approximate schedule we will follow. The instructor reserves the right to alter this schedule as necessary during the course of the semester, including the dates and number of exams.

LAB		Cell & Molecular Bio. Monday & Wednesday 4:05-8:05 Tentative Laboratory Schedule for Spring 2009	
Week	Date	Day	Topic
1	Jan 12	M	Methods for handling and storing proteins
	14	W	Laboratory solutions for proteins
2	19	M	Holiday - College Closed
	21	W	Spectrophotometric assay to determine total cellular protein concentration
3	26	M	Protein purification project
	28	W	Liquid chromatography methods
4	Feb 2	M	SDS-PAGE
	4	W	
5	9	M	Spectrophotometric determination of concentration and purity
	11	W	
6	16	M	Colorimetric determination of enzyme activity
	18	W	
7	23	M	Measurement of enzyme rates
	25	W	
8	Mar 2	M	Effects of enzyme, substrate and effector concentrations on enzyme activity
	4	W	
9	9	M	Enzyme kinetic simulation software
	11*	W	
10	23*	M	Western blotting
	25	W	
11	30	M	ELISA
	Apr 1	W	
12	6	M	Preparation of total cell protein
	8	W	Isoelectric focusing
13	13	M	PAGE
	15	W	2-D gel analysis
14	20	M	Protein expression during cell specialization
	22	W	Stress responses in cells
15	27	M	Student Presentations
	29	W	Clean Lab

GMP/GLP		Cell & Molecular Bio. Monday & Wednesday 4:05-8:05 Tentative GMP/GLP Training Plan for Spring 2009
Week	Unit	
1	1	Company Organization
2		- Research & Development
		- Production
		- Quality Control/Quality Assurance
		- Other (facilities management, maintenance, shipping & receiving, dispensing, Metrology, Marketing & sales)
3	2	Regulatory agencies
4		Quality systems & regulation (GMP)
5		ISO 9000's
6	3	Documentation
7		- SOP's
8		- Reports
9		- Logbooks
		- Chain of Custody
10	4	Monitoring Quality
11		- Purity/impurity
12		- quantitation/concentration
		- validation of methods * validation protocol
15	Apr 27	Student Presentations

Study Buddy Contact Info

As stated in this syllabus “You are responsible for any material covered and any assignments given. Call a friend, get the assignment, and be prepared for the next class. It is your responsibility to stay caught-up in this course.”

To assist you with this you must find at least three students in your class who you will contact if you miss a class. Your study buddy can give you notes explain any assignments and pick up handouts for you.

Study Buddy #1

Name _____

Email _____

Phone _____

Study Buddy #2

Name _____

Email _____

Phone _____

Study Buddy #3

Name _____

Email _____

Phone _____

Study Buddy #4 (optional)

Name _____

Email _____

Phone _____

Study Buddy Assignment (4 pts)

As you find at least two Study Buddies fill out:

1. Turn in this page for today's in-class assignment.
 - a. Remember to fill out the back side
2. Keep the Study Buddy Contact info page at the back of your syllabus.

Your Name: _____

Activities, clubs, organizations, etc. you plan to be involved in this semester _____

Study Buddy #1

Name _____

One thing you have in common with this classmate _____

Study Buddy #2

Name _____

One thing you have in common with this classmate _____

Study Buddy #3

Name _____

One thing you have in common with this classmate _____

Study Buddy #4 (optional)

Name _____

One thing you have in common with this classmate _____



Student Information Form – BIO-251, Spring 2009

Please complete the following by printing or writing legibly.

Name: _____ Phone
number(s): _____

Hometown/Country of Origin: _____

Describe your career plans:

Why are you taking this course?

Describe your science and math preparation. (What courses have you taken in high school and college?):

Please feel free to indicate any comments or questions you have for me regarding this course:

PLEASE READ THE FOLLOWING CAREFULLY BEFORE SIGNING!

I have received the syllabus for the course indicated above. I have or will read it. I am aware of the following course policies:

- ✓ Attendance
- ✓ Grading criteria
- ✓ Classroom conduct
- ✓ Instructor communication
- ✓ Lecture
- ✓ Lab and lab safety
- ✓ Assignments and late assignment policies
- ✓ Exams and late exam policies
- ✓ Classroom info
- ✓ Study expectations
- ✓ Weather policy
- ✓ Academic dishonesty and consequences
- ✓ Resources for additional information, accommodations and services

By signing and dating this form in the space below I am indicating agreement with the above statements.

Signed: _____ **Date:**
