CHEM 483 – Nucleic Acids in Research, Biotechnology, and Medicine
Spring 2023
T/R 10:50–12:05 Room: SSMB 245

Instructors Contact Information:
This class has two instructors. Both will be available for questions and explanations. If you send an email regarding the class, please include both instructors as recipients.

Dr. Renaud Geslain. Office: RITA 121. Email: geslainr@cofc.edu, Phone: 843-953-8080.

Dr. Marcello Forconi. Office: SSMB 302. Email: forconim@cofc.edu, Phone: 843-953-3616.

Office hours:
Via appointment.

Course Description:
This is an upper-level course for students with a background in biochemistry and molecular biology and a strong interest in biotechnology and medicine. The course will discuss and analyze recently published research news articles about the involvement of nucleic acids in the prevention, treatment, and diagnosis of human diseases as well as the enhancement of food, the preservation of the environment, as well as any relevant topic that is going to emerge as the semester unfolds.

Credit Hours and pre-requisites.
CHEM 483 is 3 credit hours.
Prerequisites: CHEM 351 or BIOL 312, or instructors’ permission.

Student Learning Outcomes:
- Describe and appreciate important features of nucleic acids that allow them to carry out their biological roles.
- Read and interpret articles that discuss the roles of nucleic acids in modern life.
- Discuss articles and find further references in the literature on the same topic of the discussion.
- Understand limitations and strengths of different applications of nucleic acids.
- Assess the objectivity of science news in popular media.

Important Dates:
Thursday January 12 is the first day of class.
The add/drop deadline is January 18.
No classes on March 7 and March 9 (Spring Break).
The deadline to withdraw with a status of “W” is March 24.
The last meeting is on Tuesday April 25.
The date and time allocated for final the exam is Saturday, April 29, 1-3 pm.
#### Course schedule:

**Required Materials:**
There is no textbook associated with this class. All the material will be delivered via OAKS or in the classroom by the instructors. It is the student’s responsibility to obtain the class material from these sources.

**Class Format, Etiquette, and Attendance:**
As of now, the class will be in-person in the designated room. Because of the interactive nature

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<tr>
<th>Last Name</th>
<th>First Name</th>
<th>Module#1</th>
<th>Module#2</th>
<th>Module#3</th>
<th>Module#4</th>
<th>Module#5</th>
<th>Module#6</th>
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**Graded presentation**
**Graded BQ**
**Graded ANS**
**Graded NP**
**Graded mural mosaic**

**Acronyms:**

- **BQ** = Burning Question that you write and post on OAKS
- **ANS** = Your written ANSWer to a BQ that you selected
- **NP** = Nerd Picture that you snap and post on OAKS together with a caption
- **QA** = Question on the article that is provided by your instructors (the backbone of our discussions)

Refer to the each row to see what assignments to complete:

You write one BQ before midnight that day
You answer one BQ anytime before midnight that day

The number in each box indicates the QA that you will address (alone or with another student)

QAs are provided by you instructors the Sunday before the beginning of each module

**Example:** Module#1 (Jan 12 - Jan. 26)

*Jan. 17* Grace and Tom study article#1 and present together QA#1 (we are still practicing, presentations are not graded yet).
They each post one NP before midnight (0.5 point).

*Jan. 19* Grace and Abanob study article#2 and present together QA#1 (same deal, no grade).
They each post one NP before midnight (0.5 point).
They each post one BQ before midnight (2 points).

*Jan. 24* Grace studies article#3 and presents alone QA#6 (no grade).
She posts one NP before midnight.
Kirsten selects one BQ and post a reply before midnight (7 points).

*Jan. 26* No preparation for this meeting, just relax :)

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<thead>
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<th>number of graded items</th>
<th>point value per graded item</th>
<th>total</th>
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<td><strong>Total</strong></td>
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of the class, students are strongly encouraged to attend class. Class-based discussions will contribute to the final grade, as specified in the “Grading Policy and Scale” section. These terms are subject to change in case the College of Charleston will revise its classroom policy.

**Learning Assessment:**

1. **Pre-class assignments:** You are expected to read the articles discussed in class significantly in advance. Pre-class assignments will involve activities related to the paper(s) that will be discussed and will be announced during the course.

2. **Discussion and participation:** Discussions will be fundamental in this course. You are expected to actively participate to discussions with your original contributions. Discussions will be mostly during the class period but could involve contribution to tools used outside the class period, such as the discussion board on OAKS.

3. **Post-class assignments:** Some classes will involve further explorations of the topics discussed in the class. Terms and deadlines will be given with the individual assignments.

**Grading Policy and Scale:**

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<tr>
<th>Grade</th>
<th>Percentage</th>
<th>Grade Point</th>
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<tbody>
<tr>
<td>A</td>
<td>93-100</td>
<td>4.0</td>
</tr>
<tr>
<td>A-</td>
<td>90-92</td>
<td>3.7</td>
</tr>
<tr>
<td>B+</td>
<td>87-89</td>
<td>3.3</td>
</tr>
<tr>
<td>B</td>
<td>83-86</td>
<td>3.0</td>
</tr>
<tr>
<td>B-</td>
<td>80-82</td>
<td>2.7</td>
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<tr>
<td>C+</td>
<td>77-79</td>
<td>2.3</td>
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<tr>
<td>C</td>
<td>73-76</td>
<td>2.0</td>
</tr>
<tr>
<td>C-</td>
<td>70-72</td>
<td>1.7</td>
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<tr>
<td>D+</td>
<td>67-69</td>
<td>1.3</td>
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<tr>
<td>D</td>
<td>63-66</td>
<td>1.0</td>
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<td>D-</td>
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<td>F</td>
<td>Below 60</td>
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There is no grade replacement or assignment dropping policy. There are no credit-bearing assignments other than those discussed in this syllabus.

**OAKS Course Site:**

You should check both your CofC email address and the OAKS course site regularly, as announcements will be posted and communicated using these tools, in addition to the regular communication in the class.
Below, please find nine additional statements that were drafted by our administration:

1. **Honor Code and Academic Integrity**
   As members of the College of Charleston community, we affirm, embrace and hold ourselves accountable to the core values of integrity, academic excellence, liberal arts education, respect for the individual student, diversity, equity and inclusion, student centeredness, innovation and public mission. Congruent with these core values, the College of Charleston expects that every student and community member has a responsibility to uphold the standards of the honor code, as outlined in the [Student Handbook](#). In pursuit of academic learning, you are expected to reference the work of other scholars, and complete your own academic work, while utilizing appropriate resources for assistance. Any acts of suspected academic dishonesty will be reported to the Office of the Dean of Students and addressed through the conduct process. Your adherence to these practices and expectations plays a vital role in fostering a campus culture that balances trust and the pursuit of knowledge while producing a strong foundation of academic excellence at the College of Charleston. Any questions regarding these expectations can be clarified by your instructor.

2. **Accommodations for Students with Disabilities**
   The Center for Disability Services/SNAP is committed to assisting qualified students with disabilities achieve their academic goals by providing reasonable academic accommodations under appropriate circumstances. If you have a disability and anticipate the need for an accommodation in order to participate in this class, please connect with the Center for Disability Services/SNAP. They will assist you in getting the resources you may need to participate fully in this class. You can contact the Center for Disability Services/SNAP office at 843.953.1431 or at snap@cofc.edu. You can find additional information and request academic accommodations at the [Center for Disability Services/SNAP website](#).

3. **OAKS**
   OAKS, including Gradebook, will be used for this course throughout the semester to provide the syllabus and class materials and grades for each assignment, which will be regularly posted.

4. **Inclement Weather, Pandemic or Substantial Interruption of Instruction**
   If in-person classes are suspended, faculty will announce to their students a detailed plan for a change in modality to ensure the continuity of learning. All students must have access to a computer equipped with a web camera, microphone, and Internet access. Resources are available to provide students with these essential tools.

5. **Center for Student Learning**
   The Center for Student Learning’s (CSL) academic support services provide assistance in study strategies, speaking & writing skills, and course content. Services include tutoring, Supplemental Instruction, study skills appointments, and workshops. Students of all abilities have become more successful using these programs throughout their academic career and the services are available to you at no additional cost. For more information regarding these services please visit the CSL website at [http://csl.cofc.edu](http://csl.cofc.edu) or call (843) 953-5635.
6. Land and Labor Acknowledgement
We are located on the traditional lands of the first people of Charleston: the Etiwan, Kiawah, Edisto Natchez Kusso, Santee, and Wassamassaw people (also known as Varner Town Indians). We acknowledge and honor all indigenous people who lived, labored and were faithful stewards of the land. We express our deep gratitude for the land and continued faithful stewardship to the next generations. We also acknowledge the lives and labor of the Africans who were enslaved to build Charleston, South Carolina. On this campus and in this space, African and African-descended people used skilled labor in ornamental ironwork, historic architecture, and low country agriculture and food production. As a member of the College of Charleston community, I acknowledge the Black lives and labor that built our city and our campus.

7. Diversity and Inclusion in the classroom
I am committed to creating an inclusive and accessible classroom environment for all students. I view the diversity that students bring to this class as a resource, strength, and benefit. It is my intent to present materials and activities that are respectful of diversity: gender, sexuality, disability, generational status, socioeconomic status, ethnicity, race, religious background, and immigration status. Any suggestions for promoting a positive and open environment will be appreciated and given serious consideration. I will gladly honor your request to address you by the name and gender pronouns of your choice. Please advise me of this early in the semester via your college-issued email account or during office hours so that I may make the appropriate notation on my class list.

The Multicultural Student Programs and Services provides a safe haven for students to develop connections with other students. It exists to help students be successful, provide advocacy, support services, and culturally based programs that educate about diversity and multiculturalism and empower them to be agents of social change in an increasingly diverse and global community.

The College of Charleston offers many resources for LGBTQ+ students, faculty, and staff along with their allies.

- Preferred Name and Pronoun Information
- On Campus Gender Inclusive facilities
- Campus Resources
- College of Charleston Reporting Portals
- National Resources for Faculty & Staff
- GSEC Reports
- Documenting LGBTQ Life in the Lowcountry (CofC Addlestone Library Special Collections Project)
- College of Charleston Quality Enhancement Plan (QEP)
- Articles about CofC and LGBTQ+ Issues

In keeping with the College of Charleston’s core values of diversity, equity and inclusion, the Cougar Inclusion Team (CIT) provides education, information, and recommendations regarding support resources to members of the campus community who have experienced exclusion or bias. The CIT works to support members of our campus community who report concerns by listening, discussing resources, providing guidance on resolution options, conducting education, and collecting information about occurrences on our campus. A report to the CIT team helps us better understand our campus climate, informs our educational and infrastructure opportunities to address concerns.
that are shared, and fosters an environment where everyone feels welcome. More information about the CIT, including how to report an exclusion or bias incident can be found here: Purpose - College of Charleston (cofc.edu)

8. Mental & Physical Wellbeing
We take every students’ mental and physical wellbeing seriously. If you find yourself experiencing physical illnesses, please reach out to student health services (843.953.5520). And if you find yourself experiencing any mental health challenges (for example, anxiety, depression, stressful life events, sleep deprivation, and/or loneliness/homesickness) please consider contacting either the Counseling Center (professional counselors at CofC Counseling Center or 843.953.5640 3rd Floor of Robert Scott Small Building) or the Students 4 Support (certified volunteers through texting "4support" to 839863, or meet with them in person 411 (4th Floor) Stern Center). Learn more about Students 4 Support on CofC’s Hub. These services are there for you to help you cope with difficulties you may be experiencing and to maintain optimal physical and mental health.

9. Food & Housing Resources
Many CoC students report experiencing food and housing insecurity. If you are facing challenges in securing food (such as not being able to afford groceries or get sufficient food to eat every day) and housing (such as lacking a safe and stable place to live), please contact the Dean of Students for support (SALT - Student Affairs Leadership Team). Also, you can go to Student Food and Housing Insecurity to learn about food and housing assistance that is available to you. In addition, there are several resources on and off campus to help. You can visit the Cougar Pantry in the Stern Center (2nd floor), a student-run food pantry that provides dry-goods and hygiene products at no charge to any student in need.