As a science major, there are certain encompassing competencies that you should have by the time you graduate. Students should be able to:

1. Know and apply the basic knowledge in their field of study
2. Effectively communicate this knowledge both orally and in writing
3. Exhibit strong critical thinking and problem-solving skills
4. Apply knowledge and critical thinking skills to new information and problems

MCB 298 A&B aim to help students develop some of these skills. Such skills are useful to students planning to continue to graduate school and are highly transferrable to other career paths as well.

Communication, critical thinking, problem solving, analytical skills and teamwork, appear frequently on lists of top skills sought by employers in a multitude of fields.

**OBJECTIVES:** Students will…

- Develop greater appreciation for the concept of creativity and inventive problem solving in science.
- Improve written communication skills; specifically, in scientific writing and professional communication via email.
- Improve teamwork skills through participation, reflection, and peer evaluation.
- Increase confidence interacting with research professors and discussing research ideas.

“‘I’m not very creative’ doesn’t work. There’s no such thing as creative people and non-creative people. There are only people who use their creativity and people who don’t. …The only unique contribution that we will ever make in this world will be born of our creativity.”

--Brené Brown, PhD LMSW
POLICIES:
All such policies will be applied to this course where relevant.

FORMAT and ATTENDANCE:
Students will spend most of the time in class interacting with their teammates, exchanging ideas, and gathering feedback from their peers. Some team meetings outside of class may be necessary. In order to facilitate in-class research/discussion, I ask that those of you who are able, please bring your wireless capable lap-tops or tablets to class. MCB 298 B meets once per week with two “catch-up” weeks built into the semester (a total of 12 meetings). For the “catch-up” weeks, attendance is not required; rather, groups will meet outside of class as needed. Attendance at each class meeting is critical for a complete honors experience; therefore attendance at each discussion is worth 5 points. Also, our time is short and late arrivals disrupt the class: You will receive 2 attendance points for the week if you are more than 5 minutes late to class and 1 point if you are more than 10 minutes late. Because we meet only 12 times this semester, I will not be allowing any “drops” for missed classes. However, you will be allowed to make up missed assignments as long as the absence is considered “excused.”

ASSIGNMENTS:
Throughout the semester, you will be asked to keep a Reflection Journal. Reflective journaling helps students to develop critical thinking and promotes creativity. When you write reflectively about your experiences, you think more deeply about your learning and consider how to apply those concepts to wider issues. It also develops communication skills and self-awareness.

I have had a really stressful weekend, but this journal, by just creating it, has made my day!
JOURNAL GUIDELINES:

1. Your Journal must be a physical, bound, notebook/journal of any type. Minimum size 5”x7”, any binding, lined or unlined, hand-made or purchased. No three-ring binders please. Some deviations from parameters may be allowed with permission—just ask!
2. You are REQUIRED to bring your journal to class EVERY CLASS PERIOD.
3. As in all aspects of this course, creativity is highly valued; therefore, I encourage you to be creative in producing your journal. Exploring your creative side while thinking scientifically helps to connect your “right” and “left” brain, opening yourself to new ideas and thinking “outside the box!”
4. Handwriting in your journal is encouraged (MUST be legible!) as it slows down the thinking process and helps you explore your thoughts more deeply. However, typed assignments that are glued or taped in the journal are acceptable.
5. You are highly encouraged to add pictures, sketches or any other embellishments to add visual or textural interest to your journal. Consider cutting pictures out of magazines, journals or old books. Minimally, the use of color is encouraged. Some art supplies and materials to cut up are provided in the Honors Office (213 Burrill Hall).
6. You may also express your creativity in any other way you can imagine (write a poem or photograph something). Think outside the box!
7. Most weeks, there will be specific writing prompts given. Other times, I will ask that you use your journal just as a place to keep track of your course work (notes and thoughts about your project throughout the semester) and team meetings, etc. It is also completely appropriate to include notes about connections you see to course material in other classes (both in and outside of MCB), current events, social media, and your everyday life.
8. There is never a specific length given for your entries. I expect you to write as much as you need to address the prompt. This might take something around 200 words, or it could take something like 500 or more words. I am not going to grade you on how many words you write, specifically, but I will grade you on how well I feel you have addressed the specific prompt assigned.
9. Unless otherwise noted, you are expected to have at least one new entry in your journal each week (by each class period). You are encouraged to make as many additional entries as you wish that relate to the course, course content, your thoughts about the course, etc.
10. I will read your journals, but they are for you and you will keep them at the end of the semester.

I think working on this project and this class has really encouraged my creativity, and I have found myself doing things like journaling and creating projects again … I would like to use this experience as a model for group work in the future.

Each journal entry is worth a total of 10 points with scoring as in the following chart. The lowest score for the semester will be dropped. There will be one Final Teamwork Reflection assignment that will be submitted via the CATME portal rather than in your journals. This reflection will be written ONLY and will thus have no “creative” component. The Final Reflection may NOT be dropped.
### Grading Rubric for Journal Reflection Entries

<table>
<thead>
<tr>
<th>Attention to the Writing Prompt and/or Depth of Reflection</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>No entry or incorrect prompt followed.</td>
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<tr>
<td>Extremely short, bare minimum attempt, or impossible to read or interpret due to poor presentation (grammar, neatness, etc.).</td>
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<td>Shows some effort, but short, lacking depth and/or lacking attention to basic neatness and/or grammar.</td>
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<tr>
<td>Average entry. Addresses the prompt and/or demonstrates attention to personal reflection.</td>
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<tr>
<td>Excellent entry. Demonstrates very thoughtful attention to the prompt and/or deep personal reflection.</td>
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<tr>
<td>Outstanding entry. Demonstrates deep personal insight and/or personal reflection or connections made.</td>
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</table>

<table>
<thead>
<tr>
<th>Creativity</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>No entry OR no attempt towards creativity.</td>
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<td></td>
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<tr>
<td>Bare minimum attempt at creativity: use of one “creative” element (color, illustration, etc.)</td>
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<tr>
<td>Shows some basic effort towards creativity: some decorations, but they are minimal and not necessarily related to the text/journal entry.</td>
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<tr>
<td>Average level of creativity: Use of color and embellishments or illustrations that relate to the text/journal entry. OR any other creative element that well enhances the entry.</td>
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<tr>
<td>Excellent level of creativity. Strong level of creativity is shown, but it is not necessarily that well related to the text of the written entry.</td>
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<tr>
<td>Outstanding level of creativity. Student clearly put forth time and effort to enhance the journal entry in a way that ALSO clearly ties into the text of the written entry.</td>
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</table>

Assignments with due dates must be turned in on time; late assignments will not receive full credit: a **minimum 5% of the total grade earned will be deducted for any late assignment and an additional 5% per day late. Assignments greater than one week late will not be accepted. This applies to journal checks as well. You must bring your journal to class every week.** E-mail or internet problems are no excuse for late work.

**SEMINAR ASSIGNMENT:**
Outside of class, attendance at ONE research seminar is also required. The grading rubric for the Seminar assignment is provided as a separate document.

**TEAM WORK:**
MCB 298 B will focus substantially on building teamwork skills. Hence, some grades will be assigned as a team grade, including presentations. It is important that all members of the group contribute equally to the work. **This will be assessed via personal and peer evaluation of teamwork and may be a component of the student’s final grade.** All journal work is individual. In these, your answers must be in your own words. If different students have essentially identical answers in terms of wording and phrasing or, if essentially the same as an uncited source, the University considers it copying, and copying is not acceptable. Copying will adversely affect your grade. Violations of the Student Code on Academic Integrity may also have far-reaching consequences beyond your grade, such as dismissal from Honors programs.

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*This was by far my most favorite group collaboration ever and I thoroughly enjoyed brainstorming, discussing, and hanging out with these people*
EVALUATION:
You receive one hour of Honors credit for the Honors Lab Discussion (MCB 298). This is not an “easy A”—a high level of performance is expected from all Honors students. Grades will be based upon attendance, assignments, and presentations as follows:

Grading

<table>
<thead>
<tr>
<th></th>
<th>Total Number</th>
<th>Points for each</th>
<th>Total Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attendance</td>
<td>12 (drop 1)</td>
<td>5</td>
<td>55</td>
</tr>
<tr>
<td>Reflection Journal Entries</td>
<td>11 (drop 1)</td>
<td>10</td>
<td>100</td>
</tr>
<tr>
<td>Seminar Review</td>
<td>1</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>Experimental Design Paper</td>
<td>1</td>
<td>35</td>
<td>35</td>
</tr>
<tr>
<td>Final Presentation</td>
<td>1</td>
<td>35</td>
<td>35</td>
</tr>
<tr>
<td>CATME Surveys</td>
<td>2</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2</strong></td>
<td><strong>65</strong></td>
<td><strong>265</strong></td>
</tr>
</tbody>
</table>

Letter Grade | Lowest %
-------------|----------
A+           | 97       
A            | 93       
A-           | 90       
B+           | 87       
B            | 83       
B-           | 80       
C+           | 77       

Grade cut-offs will not be higher than indicated in the grade scale chart above.

HOW TO WRITE AN E-MAIL TO YOUR INSTRUCTOR OR T.A.

From: Student
To: Instructor/TA

“hey”

lol, when is your office hours?

btw, where is you’re office?

AAAAHHHHH!! HOW DID YOU GRADUATE FROM HIGH SCHOOL?!

IT’S IN THE SYLLABUS!!!

BEFORE ASKING YOUR QUESTION, ALWAYS CONSULT:
A) THE SYLLABUS
B) COMMON SENSE
C) THE SYLLABUS

IT ONLY TAKES A SECOND TO SPELL CHECK! SERIOUSLY, YOUR TIME IS NOT THAT IMPORTANT.

MY NAME IS NOT “HEY,” “YO,” “SUP” OR “DUDE.” USE A PROPER GREETING!

OMG, WHAT ARE YOU, 14? WRITE FULL SENTENCES! THE INTERNET HAS ENOUGH BANDWIDTH.

SIGN YOUR NAME! THIS ISN’T CHAT AND WE ARE NOT FRIENDS.
DETAILED WEEKLY BREAKDOWN

Aug. 26  Week 1 Discussion—Course Policies and Introduction. Team-building: plan your photo scavenger hunt.

**Photo Scavenger Hunt.** This assignment is a fun way to practice teamwork and build camaraderie. Take photos representing the items on the below list. At least one team member must be present in each photo (some items state that it has to be the entire team). Make your photos into a slideshow to be presented in class next week. The slides should explain/identify the item in the photo if necessary. **Items do NOT have to be literal** (i.e., can be models or interpretations). BE CREATIVE!

1. Interpretation of your team name (if you don’t have one, now is the time to make one up!)
2. Something that represents your project/product
3. Entire team doing scientific research (get permission first if you are entering any research labs!)
4. Team photo with any University “landmark.”
5. Entire team in an MCB lecture OR with an MCB professor (no two teams can use the same professor, so decide ahead of time).
6. Entire team studying for an MCB class (how do we know you’re studying MCB?)
7. Entire team taking a study break
8. Show off your Illini and/or MCB gear.
9. Science Geeks
10. Entire team—where/what will you be ten years from now?

**Reflection Journal Entry 1 (due week 2):**
Write a reflection about your photo scavenger hunt adventure. How did your team work together? Did you have fun? What was easy and what was hard? Describe any positive or negative group dynamics. Your entry MUST also contain a collage, scrapbook page or any other presentation of ALL of your scavenger hunt pictures (print in color on plain paper or have photos printed and glue or tape them in your journal).

Sept. 2  **LABOR DAY HOLIDAY** — work on your photo scavenger hunt and **Journal Entry 1**

**PART ONE: Feedback from scientists.** You will Interview 2-3 professors who do research in the area of your project. Their research could be closely related or only barely related. You will explain your idea and gather feedback. Do they think it is feasible? What input can they give? (If necessary, you can divide the team into pairs or individually to do the interviews). Feedback from these professors will provide input for your final presentation.

Sept. 9  Week 2 Discussion—Slideshows of Photo Scavenger hunt in class. Groups review their projects from last semester. Do you want to carry the same project forward this semester? Do you need to revise it? Are there new team members that need to be brought up to speed? Note that major revision may require work outside of class to avoid falling behind. Begin an on-line search for professors on campus for consultation. **Plan to set up appointments for week 5 if possible.**

**Reflection Journal Entry 2 (due week 3):**
It’s the beginning of the semester, how is your group working together, compared to last semester? Do you anticipate any problems? Should you address any lingering issues/difficulties from last semester? Set at least one personal goal for yourself (in terms of being a good (better?) team member or creating a successful team dynamic, etc. and articulate how you intend to work towards achieving that goal.
Sept. 16  Week 3 Discussion—Finalize list of professors to contact and work together to draft an email you will send to the professors. The email will introduce yourselves, your purpose and provide a short (a few sentences) summary of your project. The purpose of the summary is to briefly explain the problem, solution, feasibility, etc. of your project in a concise and easy to understand way. This email will be sent to the professors to ask them if they would be willing to provide you some feedback on your project. Emails should be professional! Do NOT send it yet. Bring three copies, ds of your email draft to class next week for peer review. You MUST finish this by next week if not done in class.

Reflection Journal Entry 3 (due week 4):
Use your journal entry to list professors you intend to contact. Why are you choosing each person? How does their research relate to your project? What information do you hope to gain from your conversations?

Sept. 23  Week 4 Discussion— Peer review and Feedback of email in class. Each group should obtain feedback from at least two other groups. Remember, all of these emails should be professionally written! Work together, in class, to revise your email. Have Dr. Naidu give a final check to your email, then send them. You MUST CC me on every message sent. Begin working together in groups to draft a list of questions that will help guide your interviews with the professors. Remember, the goal is to gather input on the feasibility of your ideas. Be mindful of the professor’s time. Plan to take no more than 15-30 minutes of their time (so you will only need a few questions).

Reflection Journal Entry 4 (due week 6):
Write down your thoughts on the peer review process. How can it help to inform you in your own work? You can give specific examples from today’s class or discuss in generalities. Write about other situations in which peer review can be helpful to you (outside of your coursework).

Sept. 30  Week 5 CATCH-UP and INTERVIEWS. NO CLASS. Use this week to catch up on any of the work so far. Try to conduct all interviews by the end of this week. We will NOT hold class this week. Feel free to use class time as a meeting time if it is necessary for your group to meet, but arrange to meet anywhere you wish. Professor input will be incorporated into your final presentation so if you are unable to complete your interviews this week, they can be done later in the semester, but must be completed by the end of week 9 (Nov. 1).

Reflection Journal Entry 5 (due UPON COMPLETION OF YOUR INTERVIEWS):
Use your journal for your interview notes (or put your notes in your journal after the interview. Then, reflect on the interview process. How did you feel discussing your ideas with a “real” scientist? Was it stimulating, intimidating, scary? What kind of feedback did you receive? If you were unable to conduct your interviews this week, this reflection can be completed later, but is due no later than Nov. 4.

PART TWO: Design an Experiment. Imagine you have successfully developed your product. Design an experiment to test whether it would really work or not. What kind of experiment will you do? What are the controls? What are the expected results (if it works)? You need to decide on techniques to use but do not need to worry about detailing specific protocols.
Oc. 7  Week 6 Discussion—Begin group work on experimental design (Journal due today should contain entry 4 and possibly 5)

**Reflection Journal Entry 6 (due week 7):**
Make some connections—in thinking about your experimental design, you should be pulling in material you have learning in your current or previous MCB courses. Use this journal entry to outline your experimental design, write about a connection you can make with your MCB courses, etc.

Oct. 14  Week 7 Discussion—Continue group work on experimental design

**Reflection Journal Entry 7 (due week 9):**
In preparation for the final “marketing” portion of the semester, do some internet research on “pseudoscience in marketing.” Write an entry explaining what this means (don’t give your opinion on its use yet, you’ll do that later). NOTE: focus on the use of pseudoscience in marketing. Find 2-3 examples of current products that are being marketed using pseudoscience.

Oct. 21  Week 8 Discussion—NO CLASS. Meet outside of class, as necessary to catch up on any of the work so far.

**EXPERIMENTAL DESIGN paper DUE IN CLASS next week**

**Mid-semester Teamwork Survey via CATME due Oct. 25**

**Reflection Journal Entry 8 (due week 9):**
Reflect on how your team is functioning at this half-way point of the semester. How are you functioning as a member of your team? Are you making progress towards the goal you set at the beginning of the semester? What changes should you be making?

PART THREE: Market your product. Who/what is the market for your product (other scientists, the general community?) Recall competing technologies. Consider cost analysis. Determine approximate cost if possible or decide a ballpark based upon competing technologies and cost of components/production. Is your product really feasible from a monetary standpoint? (See grading rubric for all elements needed in final presentation.)

Oct. 28  Week 9 Discussion—Begin work on your final presentation. It will include a summary of the feedback you received from your interviews and a Marketing element. This week—work on the Interview summary: summarize all the comments from all the professors together. Are there major problems you would have to overcome? Did their input cause you to have to change direction? What else might you need to say about those interviews?

**TURN IN EXPERIMENTAL DESIGN PAPER**

**Reflection Journal Entry 9 (due week 10):**
Reflect on the use of pseudoscience in marketing. What is your opinion on using “science” to sell products? Pros? Cons? Who/what is the market for your group’s product. Could you use pseudoscience or real science to market it? Would you? If so, how might that look?
Nov. 4  Week 10 Discussion—Design a marketing element for your product. BE CREATIVE. Some ideas for this part are a full-page magazine advertisement, a video commercial, an actual mock-up of the product, packaging, etc. Consider slogans, etc.

Reflection Journal Entry 10 (due week 12):
See below.

Nov. 11  Week 11 Discussion—Continue groupwork for Final presentation. Assign outside of class work to members/teams as needed.  
REMINDER!!! Seminar review paper due next Monday (Nov. 18) in class.

Reflection Journal Entry 10 (due week 12):
This will be your final assigned entry. Your final reflection comments should focus on your presentation. Write down any thoughts you have going into the presentation regarding the final choice of project (would you have changed anything) or how you have prepared for the presentation.

Nov. 18  Week 12 Discussion—Continue groupwork for Final presentation. Assign outside of class work to members/teams as needed. Use your time wisely—don’t leave finalizing your presentation for break!  
TURN IN SEMINAR REVIEW PAPER

Nov. 25  FALL BREAK

Dec. 2  Week 13 Final Team presentations. 20-25 max per group. All teams must be prepared to present today. Presentation order will be chosen at random.  
Journals due today—will be returned next week.

Dec. 9  Week 14 Final Team presentations. 20-25 max per group.  
Teamwork personal reflection (10 pts) and final Survey (5) via CATME assigned—Due Dec. 10

Reflection Journal Entry 11 (due Final Teamwork Personal Reflection (in CATME): The comment section of the CATME survey must include both a summary of your thoughts regarding your team and your project for the semester AND a personal reflection of your own strengths and weaknesses as a team member and thoughts on how you might improve moving forward (in future group work). Please be sure to complete this assignment by typing in your thoughts and reflections directly into the comment section of the CATME survey. There is no “creative” component to this entry: the entire assignment is worth 10 points.

In order for your Reflection journal to be complete for the semester, I encourage you to then print out a copy of these final reflection comments and included them as a final entry into your journal for the semester. Perhaps also including some personal after-thoughts on your final presentation. But I will not require to you show me this final entry.

Your journals are yours to keep!