



BMD RES 199 Course Contract Requirements and Undergraduate Research Agreement with The Minor in Biomedical Research

TO STUDENT: Responsibilities of the student:

- Submit signed research proposal **by 1:00 PM on Thursday of Week 2 to Enika Tumanov, 220B Hershey Hall**. After Week 2, late fees are incurred on your account.
- Provide documentation that you have completed the Laboratory Safety Fundamental Concepts course. Visit <http://training.ehs.ucla.edu/> to complete initial training or online refresher if initial certification has expired.
- Meet, discuss, and obtain faculty signature agreeing to the research proposal and delegated supervision.
- Develop and execute a proposal for Biomedical Research according to the “Biomedical Research 199 Project Proposal Guidelines” (found on page 3 of this packet).
- Conduct a minimum of 12-15 hours per week of research in the lab throughout the quarter.
- Prepare an 8th week draft and a 10th week final paper for each quarter enrolled in BMD RES 199.

NOTE: If enrolling in Biomedical Research 199 will put you over 19 units for the quarter or session, it is your responsibility to petition for additional units at your College’s Office.

By signing below, I understand that Biomedical Research 199 is restricted to current students in the Biomedical Research Minor. I have read and agree to all of the requirements in this packet to enroll in BMD RES 199.

Proposed Enrollment Quarter (circle one)	Fall	Winter	Spring	Summer (10-week Session A)
Proposed Enrollment Year (indicate the year)				
Student Name				
Student UID #				
Student Email				
Student Signature				
Date				

TO FACULTY: Responsibilities of the faculty Research Sponsor:

- Discuss research proposal development with the student.
- Provide student with a research timeline for each quarter of project, to be attached to and turned in with student’s research proposal.
- Provide supervision for student, either directly or through experienced lab member.
- Direct student’s supervisor, if other than Faculty Research Sponsor.
- Read and approve student’s 8th week draft and final, revised paper each quarter.
- Submit grades electronically within specific time window established by UCLA Registrar.

By signing below, I have read and agreed to all of the terms and requirements in support of the student’s proposed research and enrollment in Biomedical Research 199.

Faculty Research Sponsor / Instructor of Record	
Department	
Research Sponsor / Faculty Signature	
Faculty Email	
Faculty Phone	
(Print) Name of Student’s Direct Research Supervisor, if different than Instructor of Record	
Date	

Overview, Requirements and Deadlines

General Info:

Biomedical Research 199 is restricted to current students in the Biomedical Research Minor. This departmental 199 is designed for upper division students in the Minor to participate in an independent research project leading to the submission of a research paper and senior thesis.

Complete BMD RES 199 Course Contracts:

The following (4) items must be submitted for the BMD RES 199 Course Contract.

- 1. Contract printed from MyUCLA signed by both the student and the faculty research sponsor.
- 2. A completed proposal signed by the student and faculty research sponsor.
- 3. "Undergraduate Research Agreement with The Minor in Biomedical Research" (Page 1 of Packet).
- 4. Documentation that you have completed the Laboratory Safety Fundamental Concepts course.

Quarterly Deadlines:

You must adhere to the following timeline to manage timely completion of BMD RES 199.

- Prior to **Week 1** – Meet, discuss, and obtain faculty signature agreeing to research proposal and delegated supervision.
- **By 1 PM Thursday of Week 2 (January 18th)** - Turn in the complete BMD RES 199 Course contract to Enika Tumanov in Hershey Hall, Room 220B.
- **By Wednesday, Week 8 of the quarter** - Turn in a draft of your 199 report to your faculty research sponsor for review and signature.
- Sometime during **Week 9**, pick up your draft with comments from your faculty research sponsor.
- Turn in your final paper (and your draft) at the mutually agreed upon date that you and your research sponsor set at the beginning of the quarter.
- Turn in a copy of your final, signed paper to Enika Tumanov or Dr. Ira Clark no later than **5:00 PM on Friday of Week 10**. If you have any concerns about this deadline please contact Enika Tumanov at etumanov@lifesci.ucla.edu by Week 7.

Biomedical Research 199 Project Proposal Guidelines

The Basics:

- Proposals must be typed.
- Your name, student ID # and email address should appear on the first page; name and student ID# should appear on every subsequent page.
- Your research sponsor's full name, telephone and email address should appear on the first page
- Pages should be numbered.
- Both you and your research sponsor must sign the proposal prior to submitting, indicating that you both understand/agree to what is expected of you and what will be accomplished in the course.
- For the contract you must submit along with you proposal, logon to MYUCLA and click on "Contract Courses." You should select Directed Research (CRS #199). The number of units should be four (4) and the grading basis should be "Letter Grade."
- When you have completed the contract, print the form. Sign it yourself, and obtain your research sponsor's signature as instructor.
- Please do not seek to obtain a signature for either the Biomedical Research Chair or the Chair of your research sponsor's home department. This will be handled by the Biomedical Research Office.
- Your project proposal should be prepared on separate paper and then appended to the contract (to get the contract form, logon to MyUCLA and then click on the acknowledgement forms link in the left hand column).

The Proposal:

- Your proposal should begin with a problem statement (a clear description of the larger problem within which your research project is situated).
- Your proposed project should be appropriate in scope for a 10-week project (a timeline must be included in the proposal).
- A description of the specifics of your 199 project should follow, which includes the particular research questions to be answered, the existing bodies of literature that will set your project into context, the methods that will be used to generate data, and how the data will be collected and subsequently analyzed. Your proposal must make clear the precise role that you, the student, will play in the lab including how much and what part of the data collection will be completed by you.
- The description of your project should be followed by an explanation of how this specific project contributes to the solution of the larger problem. In other words, what role might your project or its findings play in answering questions posed by the larger problem?
- The project that you and your research sponsor design should reasonably fit research and writing within the one-quarter framework imposed by Biomedical Research 199 and require no less than 12 hours per week in the lab.
- Your research sponsor should give you an estimate of approximately how many hours per week on your part (for the duration of one quarter) the proposed project is expected to involve. That estimate should be included in the project proposal.

How to Enroll in Biomedical Research 199 through MyUCLA

- Step 1: Logon to MyUCLA: <http://my.ucla.edu/>.
- Step 2: Click on “**Contract Courses**” (listed under MyUCLA Features).
- Step 3: From the “**My Contract Courses**” page, you can view the status of previously created contracts or create a new contract for Biomedical Research 199.
- Step 4: Select your year and term. Then click “**Go.**”
- Step 5: Choose a tutorial type from the Contract Course menu. Then click “**Continue.**”
- Step 6: Read the enrollment instructions. Then click “**Continue.**”
- Step 7: Choose Course Number BMD RES 199 and which quarter. Then click “**Continue.**”
- Step 8: Choose a Faculty Mentor. (Please note: This means you will need to know how to properly spell your research sponsor’s name before you begin the contract.) Then click “**Continue.**”
- Step 9: Select the grade type and number of units. Select 4 units and the letter graded option. Then click “**Continue.**”
- Step 10: Enter description of project and tangible evidence. For the project description and nature of faculty supervision, please write only “see attached proposal.” The tangible evidence as proof of work completed will always be “**Quarterly Research Paper.**” Then click “**Continue.**”
- Step 11: Review contract. Carefully review the contract you have just made, to make sure that you have the correct course number and instructor information, and that you have appropriately completed any other parts of the contract, as detailed above.
- Step 12: Agree to Contract Terms. Then click “**Continue.**”
- Step 13: “**Print**” the completed contract and supplemental forms. You need to sign the contract and get your faculty research sponsor to sign it as an instructor. However, please do not seek to obtain the chair’s signature. This will be handled by the Biomedical Research Office.

Checklist for all Biomedical Research Final Reports

Your final 199 paper should be written as if it were a scientific paper that you are submitting to a journal for publication. Therefore, we expect a careful and polished product for both your draft and final reports. **ALWAYS** carefully proofread your paper and follow the checklist before submitting your paper.

IMPORTANT: *It is a form of academic dishonesty to turn in material written by someone else in the lab for some other purpose (a section of a grant proposal, or an article in preparation) and given to you for use as a guide in preparing your research proposal or your paper. Both your proposal and your paper should be your own write-up, reflecting your understanding in your own words. If you do utilize such materials for information purposes, make sure to cite them appropriately in your paper.*

FORMAT:

- 1. Double space the entire document, including the references and the figure legends.
- 2. Do not leave widows (paragraphs or headings beginning on the last line of a page) or orphans (a page beginning with the last line of a paragraph).
- 3. Make your headings clear (underline, capitalized or make bold, etc.) and put extra spaces between major sections.

GENERAL CONTENT:

- 4. The paper must contain: TITLE PAGE, ABSTRACT, INTRODUCTION, MATERIALS AND METHODS, RESULTS DISCUSSIONS AND LITERATURE CITED (REFERENCES).
- 5. Make your paper understandable to a scientifically literate person, not only to experts in the particular area in which you are working. Make your paper general, not overly specialized. (This approach particularly applies to the introduction and discussion).
- 6. Carefully proofread your paper for typos, poor English, omissions from this checklist, etc. Utilize spell check and grammar check.

GENERAL PRACTICES:

- 7. Do not use future tense, especially in the introduction, materials and methods, and results.
- 8. Where possible use the past tense when referring to your work (after all, it is what you did) and usually the work of others. Use active verbs (i.e., I prepared recombinants, etc.).
- 9. Use standard abbreviations whenever possible; these are not followed by periods (e.g., min, hr, sec, gm, um, ul, etc.).
- 10. Do not use jargon (remember your audience); limit or carefully define any words not commonly used.
- 11. Give the definition of acronyms at the time of first usage.
- 12. Do not start sentences with a number; write the number out if you do so.

BY SECTIONS:

Title:

- 13. Title should be free of jargon and not overly specialized (remember you are writing for a highly-educated, but general audience).
- 14. **Title Page** should include the following information:
 - The title of your paper
 - Your name and student ID number
 - The course number and the quarter
 - Your research sponsor's full name, telephone extension and email address
 - Except for the title page all pages should be numbered

Abstract:

- 15. The Abstract should be a short synopsis of your project, your methods, your results and your conclusions.

Introduction:

- 16. Introduction should include an overview of the problem and the point of the study, framed by a consideration of the appropriate literature, and a clear statement of your hypothesis and objectives.

Materials and Methods:

- 17. The Materials and Methods section should contain enough information about how you conducted your experiments, so that someone else could replicate them exactly.
- 18. Decimals should be preceded by a number, including a 0 (.35=incorrect; 0.35 correct).

Results:

- 19. The results section should only contain what you found (i.e. the data) and be free of interpretation.
- 20. The word "data" is a plural word; use it properly (singular form is "datum").

Discussion:

- 21. The Discussion should include your interpretation of your data, an integration of your findings with data and hypotheses found in the literature, and your conclusions. This is a very important section.

References:

- 22. Use the format found in the journal *Science* to cite literature in the text of your paper as well as to format your reference list.
- 23. List only (and all) references cited in the text of your paper in your reference list.
- 24. Indicate each journal with the appropriate abbreviation.

Figures and Tables:

- 25. Put all tables and figures at the end of the manuscript after the REFERENCES section.
- 26. Put each figure and/or table on a separate page.
- 27. Each figure and/or table must have a self-sufficient legend and the axes of the graphs in figures should be clearly labeled.
- 28. Tables should not be redundant with the figures. If they are redundant, figures are preferable in most situations, so omit the table.

The Draft and Final Report:

- 29. For the initial draft of the 199 report we expect to see a complete title, introduction, materials and methods, and references AND something in the results and discussion sections; the more complete the better.
- 30. The initial draft is due to your faculty sponsor by no later than 5:00 P.M. on the Wednesday of 8th week.
- 31. Early in the quarter, you and your advisor must mutually arrange a date for you to turn in a copy of your final report to her/him, bearing in mind that he/she may have meetings out of town around finals time that you wouldn't be aware of. **Do not assume that you can turn in the final copy to your sponsor on the Biomedical Research deadline date! A final copy of the 199 paper is due to Enika Tumanov or Dr. Clark no later than 5pm on Thursday, of Finals Week.**
- 32. Along with the final report, you also must return the copy of the draft report with all original comments to your sponsor.
- 33. Please do not put your papers into folders or binders before turning them in.

Regarding your GRADE, your advisor will be contacted and advised as to how to submit your grade.
Failure to comply with items stated on this checklist may result in a lowering of your final grade.

NOTE: Special thanks to the MCDB Department for this checklist.