

Department of Microbiology - Topic Exam Rubric

Criteria	Exceeds Expectations	Meets Expectations	Does Not Meet Expectations
Organization and effectiveness of written proposal	<ul style="list-style-type: none"> ▪ Writing is exceptionally clear and ideas are innovative ▪ Hypotheses, alternative approaches, and impact explicitly described 	<ul style="list-style-type: none"> ▪ Proposal is clear, with minimal mechanical errors ▪ Proposal contains all relevant information 	<ul style="list-style-type: none"> ▪ Proposal contains abundance of errors such that meaning is obscured ▪ One or more sections are missing
Organization and effectiveness of presentation	<ul style="list-style-type: none"> ▪ Mature scientific language ▪ Engaging presentation 	<ul style="list-style-type: none"> ▪ Presentation is clear ▪ Relevant information is included 	<ul style="list-style-type: none"> ▪ Presentation is hard to follow ▪ Relevant details are missing and/or irrelevant details are distracting
Central biological question is clearly defined and significance is conveyed	<ul style="list-style-type: none"> ▪ Exhibited independence and depth of thought ▪ Synthesizes discrete data into a coherent model/hypothesis 	<ul style="list-style-type: none"> ▪ Cites directly relevant experiments/papers ▪ Understands foundational experiments and scientific impact ▪ Critically evaluates gaps in the field 	<ul style="list-style-type: none"> ▪ Not a logical extension of prior work or is incremental/already done ▪ Lack of understanding of foundational experiments and/or scientific impact ▪ Premise of the proposal is weak due to lack of critical thinking
Hypothesis is clearly stated; or are hypothesis-generating goals clearly defined?	<ul style="list-style-type: none"> ▪ Hypothesis shifts the thinking in the field and, if true, would establish a new paradigm ▪ Exceptionally novel hypothesis-generating approach ▪ Project could advance other fields beyond the specific discipline 	<ul style="list-style-type: none"> ▪ Hypothesis is logical, testable, and follows from previous observations ▪ Hypothesis-generating approach is feasible and will address the question 	<ul style="list-style-type: none"> ▪ Hypothesis is not clearly testable or is a simple observation ▪ Hypothesis-generating approach fails to address the biological question
Aims will effectively test the hypothesis	<ul style="list-style-type: none"> ▪ Even negative data will be impactful ▪ Anticipated outcomes show exceptional vision ▪ Multidisciplinary methods are used to test hypothesis 	<ul style="list-style-type: none"> ▪ Logical progression of thought ▪ Well-controlled experimental approach ▪ Feasible ▪ Experiments distinguish between competing hypotheses 	<ul style="list-style-type: none"> ▪ Experiments are ambiguous ▪ Lack of proper controls ▪ Lack of feasibility
Pitfalls and alternatives approaches are considered	<ul style="list-style-type: none"> ▪ Fully-formed alternative approaches ▪ Detailed rationale for prioritization of experiments 	<ul style="list-style-type: none"> ▪ Technical challenges recognized and acknowledged ▪ Alternative approaches considered 	<ul style="list-style-type: none"> ▪ Has not considered alternative approaches ▪ Has not considered results beyond expected results
Technical knowledge proficiency	Can describe the strengths and weaknesses of the proposed techniques compared to others	Understands the underlying principles of all proposed experiments but may not know all the details of each protocol	Knows the name of the method but not underlying principles

General guidance based on number of 'Does not meet expectations' categories: 1-2 = conditional pass, 3-5 = re-examine, 6-7 = fail

Possible Outcomes:

- Pass**
- Conditional Pass:** The committee requires the student to repeat some aspect(s) of the examination or other remedial work
- Re-examine:** The committee requires the student to repeat the examination and recommends that the student be placed on probation until successful re-examination.
- Fail:** The committee recommends that the student be dropped from the program.