**Written Dissertation and Oral Defense (PhD) and re-examination of content knowledge**

Student Number of refereed journal articles accepted or in press by today \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Committee member\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| --- | --- | --- |
| **Student Learning Outcome** | **SCORE** | **SCALE** |
| **SLO 1** (biology) | Information correct and relevant |  | **4 = Exemplary****3 = Proficient****2 = Marginal****1 = Unacceptable** |
|  | Question fully answered |  |
|  | Terminology and citations |  |
|  | Interpretation of content |  |
|  | **SLO 1 Biology SUM** |  |
| **SLO 1** (entomology/nematology) | Information correct and relevant |  | **4 = Exemplary****3 = Proficient****2 = Marginal****1 = Unacceptable** |
|  | Question fully answered |  |
|  | Terminology and citations |  |
|  | Interpretation of content |  |
|  | **SLO 1 Entomology/Nematology SUM** |  |
| **SLO 1** (research area) | Information correct and relevant |  | **4 = Exemplary****3 = Proficient****2 = Marginal****1 = Unacceptable** |
|  | Question fully answered |  |
|  | Terminology and citations |  |
|  | Interpretation of content |  |
|  | **SLO 1 Research area SUM** |  |
| **Student Learning Outcome** | **SCORE** | **SCALE** |
| **SLO 2**Experimental design, research methodology and statistics | Statistical understanding |  | **4 = Exemplary****3 = Proficient****2 = Marginal****1 = Unacceptable** |
| Experimental design understanding |  |
| **SLO 2 Experimental design and statistics SUM** |  |
| **Student Learning Outcome** | **SCORE** | **SCALE** |
| SLO 3Oral presentation skills | Organization |  | **4 = Exemplary****3 = Proficient****2 = Marginal****1 = Unacceptable** |
| Language |  |
| Delivery |  |
| Supporting material |  |
| Central message |  |
| **SLO 3 Oral presentation skills 1  SUM** |  |
| **SLO 3**Written skills2 | Context and purpose |  | **4 = Exemplary****3 = Proficient****2 = Marginal****1 = Unacceptable** |
| Content development |  |
| Conventions |  |
| Sources and evidence |  |
| Syntax and mechanics |  |
| **SLO 3 Written skills2 SUM**  |  |
| **Student Learning Outcome** | **SCORE** | **SCALE** |
| **SLO 5** Critical thinking and application of inquiry and analysis3 | Clear statement of research problem and motivation |  | **4 = Exemplary****3 = Proficient****2 = Marginal****1 = Unacceptable** |
| Value of research demonstrated |  |
| Knowledge of literature  |  |
| Well-defined hypotheses or objectives  |  |
| Sound methods/tools  |  |
| Data interpretation and analysis |  |
| Conclusions |  |
| Broader impact and limitations |  |
| Independent research and developed expertise |  |
| **SLO 5 – PhD** **Critical thinking** **SUM** |  |

 These scores do not determine whether the student passes or fails the oral defense or the written thesis/dissertation. They are for the committee to consider when deciding on whether the student passes or not. All committee members should fill out a form and copies should be delivered to the Graduate Coordinator’s office for deposit in the student’s file.

Supervisory committee chair - please share the results of this evaluation with your student, either summarizing their strengths/weaknesses or showing the individual score sheets.

SLO 1 (knowledge of discipline) = \_\_\_\_\_\_\_\_\_\_\_\_\_ (maximum 48, minimum 12)

SLO 2 (knowledge of statistical and research methodology) = \_\_\_\_\_\_\_\_\_\_\_\_\_ (maximum 8, minimum 2)

SLO 3 (oral communication skills) = \_\_\_\_\_\_\_\_\_\_\_\_\_ (maximum 20, minimum 5)

SLO 3 (written communication skills) = \_\_\_\_\_\_\_\_\_\_\_\_\_ (maximum 20, minimum 5)

SLO 5 (critical thinking ability) = \_\_\_\_\_\_\_\_\_\_\_\_\_ (maximum 36, minimum 9)

Additional comments (strengths/weaknesses):

1 Taken from Written Communication VALUE Rubric – Association of American Colleges and Universities

2 Taken from Oral Communication VALUE Rubric - Association of American Colleges and Universities

3 Modified from Inquiry and Analysis VALUE Rubric - Association of American Colleges and Universities

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| --- | --- | --- | --- | --- |
| **Student Learning Outcome** | **4 - Exemplary** | **3 - Proficient** | **2- Marginal** | **1 - Unacceptable**  |
| **SLO 1**Identify insects, other arthropods and/or nematodes, and describe their relationship with the environment and humans (Max. points 48, min. 12) | **General knowledge in biology** | * All information presented is both accurate and relevant
 | * Nearly all information presented is accurate and relevant
 | * Many inaccuracies and some misinterpretation of content and largely irrelevant
 | * Inaccurate or misinterpreted content and almost entirely irrelevant
 |
| * Question is answered fully
 | * Question is essentially answered
 | * Multiple aspects of question unanswered
 | * Question not answered
 |
| * Proper use of terminology and citations
 | * Mostly proper use of terminology and citations
 | * Improper use of terminology and citations
 | * Misuse of terminology and citations
 |
| * Insightful interpretation of the content
 | * Demonstrates clear understanding of the content without misinterpretation
 | * Misinterpretation of content
 | * Gross misinterpretation of content
 |
| **General knowledge in entomology or nematology** | * All information presented is both accurate and relevant
 | * Nearly all information presented is accurate and relevant
 | * Many inaccuracies and some misinterpretation of content and largely irrelevant
 | * Inaccurate or misinterpreted content and almost entirely irrelevant
 |
| * Question is answered fully
 | * Question is essentially answered
 | * Multiple aspects of question unanswered
 | * Question not answered
 |
| * Proper use of terminology and citations
 | * Mostly proper use of terminology and citations
 | * Improper use of terminology and citations
 | * Misuse of terminology and citations
 |
| * Insightful interpretation of the content
 | * Demonstrates clear understanding of the content without misinterpretation
 | * Misinterpretation of content
 | * Gross misinterpretation of content
 |
| **In-depth knowledge in area of research specialization**  | * All information presented is both accurate and relevant
 | * Nearly all information presented is accurate and relevant
 | * Many inaccuracies and some misinterpretation of content and largely irrelevant
 | * Inaccurate or misinterpreted content and almost entirely irrelevant
 |
| * Question is answered fully
 | * Question is essentially answered
 | * Multiple aspects of question unanswered
 | * Question not answered
 |
| * Proper use of terminology and citations
 | * Mostly proper use of terminology and citations
 | * Improper use of terminology and citations
 | * Misuse of terminology and citations
 |
| * Insightful interpretation of the content
 | * Demonstrates clear understanding of the content without misinterpretation
 | * Misinterpretation of content
 | * Gross misinterpretation of content
 |
| **SLO 2**Discuss appropriate research methodology, including aspects of statistical design and analysis, in the execution of arthropod research(Max. points 8, min. 2) | **General knowledge in statistics and experimental method** | * Answers all statistical questions correctly, in detail and logically
 | * Answers all statistical questions in some detail
 | * Attempts all statistical questions but has errors in answers
 | * Does not attempt to answer all statistical questions and/or has many errors
 |
| * Answers all experimental methodology questions correctly, in detail and logically
 | * Answers all experimental methodology questions in some detail
 | * Attempts all experimental methodology questions but has errors in answers
 | * Does not attempt to answer all experimental methodology questions and/or has many errors
 |
| **SLO 3**Written skills 1Max. 20 points, min. 5 points | **Context and purpose** | Demonstrates a thorough understanding of context, audience, and purpose that focuses all elements of the work. | Demonstrates adequate consideration of context, audience and purpose, and a clear focus of the work. | Demonstrates awareness of context, audience, and purpose of the work. | Does not demonstrate attention to context, audience, and purpose of the work. |
| **Content development** | Consistently uses appropriate, relevant and compelling content to illustrate mastery of the subject, conveying the writer’s understanding. | Consistently uses appropriate, relevant, and compelling content to explore ideas within the subject. | Use appropriate and relevant content to develop and explore ideas throughout most of the work. | Does not use appropriate and relevant content to develop simple ideas. |
| **Conventions** | Detailed attention to and successful execution of all conventions specific to the discipline (organization, content, presentation, formatting, style) | Consistent use of important conventions specific to the discipline. | Follows expectations appropriate for specific discipline for organization, content and presentation. | Does not use a consistent system for basic organization and presentation. |
| **Sources and evidence** | Demonstrates skillful use of high-quality, credible, relevant sources to develop ideas that are appropriate. | Demonstrates consistent use of credible, relevant sources to support ideas. | Demonstrates an attempt to use credible and/or relevant sources to support ideas. | Does not use sources to support ideas. |
| **Syntax and mechanics** | Uses language that skillfully communicates meaning to readers with clarity and fluency, and is virtually error-free. | Uses straightforward language that generally conveys meaning to readers and has few errors. | Uses language that generally conveys meaning to readers with clarity but may include errors. | Uses language that sometimes impedes meaning because of errors in usage. |
| **Student Learning Outcome** | **4 - Exemplary** | **3 - Proficient** | **2- Marginal** | **1 - Unacceptable**  |
| **SLO 3**Oral presentation skills2Max. 20 points, min. 5 points | **Organization**(specific introduction and conclusion, sequence of material in body, and transitions) | Organizational pattern is clearly and consistently observable, is skillful, and makes the content of the presentation cohesive | Organizational pattern is clearly and consistently observable | Organizational pattern is intermittently observable  | Organizational pattern is not observable |
| **Language** | Language choices enhance the effectiveness of the presentation and are appropriate for the audience. | Language choices generally support the effectiveness of the presentation and are appropriate for the audience. | Language choices partially support the effectiveness of the presentation and are appropriate for the audience. | Language choices are unclear and minimally support the effectiveness of the presentation and are not appropriate for the audience. |
| **Delivery**(posture, use of pointer, eye contact, vocal expressiveness) | Delivery techniques make the presentation compelling, and speaker appears polished and confident. | Delivery techniques make the presentation interesting and speaker appears comfortable.  | Delivery techniques make the presentation understandable, and speaker appears tentative. | Delivery techniques detract from the understandability of the presentation and speaker appears uncomfortable.  |
| **Supporting material**(explanations, examples, illustrations, figures, photos, diagrams, statistics) | A variety of supporting materials makes appropriate reference to information or analysis that significantly supports the presentation. | Supporting materials make appropriate reference to information or analysis that generally supports the presentation. | Supporting materials make appropriate reference to information or analysis that partially supports the presentation. | Insufficient supporting materials make reference to information or analysis that minimally supports the presentation. |
| **Central message** | Central message is compelling (strongly stated, appropriately repeated, memorable and strongly supported). | Central message is clear and consistent with the supporting material. | Central message is basically understandable but is not often repeated or is not memorable. | Central message can be deduced, but is not explicitly stated in the presentation. |
| **Student Learning Outcome** | **4 - Exemplary** | **3 - Proficient** | **2- Marginal** | **1 - Unacceptable**  |
| **SLO 5 – PhD** Critical thinking and application of inquiry and analysis3Max. 36 points, min. 9 points | Has stated the research problem clearly,providing motivation for undertaking the research | Clear statement of the research problem with well stated associated rationale | Statement of research problem with associated rationale | Unclear statement of research problem OR rationale for undertaking the research is not well developed | Unclear statement of research problem AND rationale for undertaking the research is not well developed |
| Demonstrated the potentialvalue of solution to the research problem in advancingknowledge within the area of study | Clearly states the value of the proposed research | States the value of proposed research | Recognizes the value of the research but didn’t state explicitly | Doesn’t recognize the potential value of the proposed research |
| Demonstrates soundknowledge of literature in the area, and of prior work on thespecific research problem | Synthesizes in-depth information from relevant sources representing various points of view/approaches | Presents in-depth information from relevant sources presenting various points of view/approaches | Presents information from relevant sources representing limited points of view/approaches | Presents information from irrelevant sources representing limited points of view/approaches |
| Research is creative and original with well-defined hypotheses or objectives | Highly creative and original with well-defined hypotheses or objectives | Somewhat creative and original with well-defined hypotheses or objectives | Research not very creative and original OR hypotheses or objectives not well-defined | Research neither creative nor original AND hypotheses or objectives not well-defined |
| Has applied sound state-of-the fieldresearch methods/tools to solve the defined problem and hasdescribed the methods/tools effectively | All elements of the methodology are skillfully developed. Appropriate methodology may be synthesized from across disciplines or from relevant subdisciplines | Critical elements of the methodology are appropriately developed, however, more subtle elements are ignored or unaccounted for | Critical elements of the methodology are missing, incorrectly developed, or unfocused | Design of experiments demonstrates a misunderstanding of the methodology |
| Analyzed and interpreted research results/dataeffectively | Organizes and synthesizes evidence to reveal insightful patterns, differences, or similarities related to focus | Organizes evidence to reveal important patterns, differences, or similarities related to focus | Organizes evidence, but the organization is not effective in revealing important patterns, differences, or similarities | Lists evidence, but it is not organized and/or is unrelated to focus |
| Conclusions | Conclusions are logical extrapolations from the research findings | Conclusions focused solely on research findings. | Conclusions are so general that they apply beyond the scope of the research findings | Conclusions are ambiguous, illogical, or unsupportable from inquiry findings |
| Demonstrated awareness of broaderimplications and limitations of the concluded research | Insightfully discusses in detail relevant and supported limitations and implications | Discusses relevant and supported limitations and implications | Presents relevant and supported limitations and implications | Presents limitations and implications but they are possibly irrelevant and unsupported |
|  | Has demonstrated capability forindependent research in the area of study and expertise in thearea, appropriate to the degree | Research was conceived and conducted independently and candidate has demonstrated a high level of expertise in the area | Research was conceived and conducted with minimal supervision. Candidate is confident in the area of research | Research topic and methodology was conceived with much supervision. Candidate shows some competence in the area | Research topic and methodology was provided to the student and candidate shows little expertise in the area |