

Rubric

I. Why do we need to use rubrics?

The capstone course is the last course set by the department (institute), which has the functions of integrating, summarizing, reflecting on the department's learning experience, transitioning to the future career, and serving as the department's review of the curriculum structure. There are two main reasons for using rubrics in the capstone course. One is that the course usually involves different professional teachers or industry teachers to grade or review, so a public, fair, and impartial evaluation becomes crucial, which can allow all teachers or industry teachers to clearly evaluate the indicators and reduce the risk of subjective grading. The other is to guide students to learn more effectively. Through rubrics, students can clearly understand the learning focus and expected goals of the course. In addition, through the grading results, students can identify their strengths and weaknesses and know how to improve and learn better.

II. What is a rubric?

A rubric is a tool for setting grading criteria, combining qualitative descriptions and quantitative scores, to assess students' specific assignments or performances. Each criterion clearly states the level of achievement, so that students can understand the learning outcomes of each criterion, and then understand their own strengths and weaknesses and areas that need improvement, making learning meaningful, rather than just getting a single total score. The rubrics related to the course include project reports, essays, and internships. The following are the reference websites for the relevant rubrics. The departments can adjust them to the appropriate assessment indicators according to the learning objectives. In addition, the following are the rubrics used by the departments. Thank you to these departments for their generosity.

The reference websites for rubrics are as follows:

- iRubrics https://reurl.cc/pr6yZ8 (Provides rubrics for different learning stages, topics, and assessment types)
- Syracuse University https://reurl.cc/rr5x2r (Provides rubrics for specific tasks in different professional fields, such as dissertations)
- University of Colorado Boulder Center for Teaching and Learning https://reurl.cc/qrLm0y (Provides rubrics for specific skills, such as creative thinking and teamwork, and specific assessment types, such as projects and research papers)

Example (1) Project Report Rubric

Total score :

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Grading level and Assessment indicator	Needs improvement (5)	Acceptable good (7)	Good (9)	Excellent (10)	Allocation	score	
Communication skills	<ul style="list-style-type: none"> □Off-topic or incorrect statements. □Unclear expression, reading from a script, ignoring the audience. 	<ul style="list-style-type: none"> □Statements are related to the topic but incomplete; logic is loose. □Expression is clear but often needs to look at the script, occasionally makes eye contact with the audience. 	<ul style="list-style-type: none"> □Statements are consistent with the topic; logic is clear. □Expression is clear and smooth; often makes eye contact with the audience. 	<ul style="list-style-type: none"> □Statements are in-depth on the topic; logic is clear and rigorous. □Expression is captivating; eye contact is natural and attentive to the audience, and the presentation is well-matched. 	10		
Presentation production	<ul style="list-style-type: none"> □Font is too small or too many, no paragraphing or some words are outside the screen, covered or hard to recognize. □No charts/videos or charts/videos are inappropriate, not helpful for understanding. 	<ul style="list-style-type: none"> □Font is too small or too many, no paragraphing or some words are outside the screen, covered or hard to recognize. □No charts/videos or charts/videos are inappropriate, not helpful for understanding. 	<ul style="list-style-type: none"> □Font and layout are ordinary, no obvious flaws. □There are charts/videos, but the effect is mediocre. 	<ul style="list-style-type: none"> □Font is clear, easy to see, and has appropriate colors and layout. □There are suitable charts/videos, which help understanding and increase attractiveness. 	10		
Outcome content	<ul style="list-style-type: none"> □Content structure is incomplete, and lacks coherence and logic. □No analysis or comparison is presented, unfamiliar with the field's professional knowledge. 	<ul style="list-style-type: none"> □Content structure is acceptable, but the overall coherence and logic are poor. □Some preliminary analysis is conducted and the field's professional knowledge is adequate. 	<ul style="list-style-type: none"> □Content structure is fairly complete, overall coherence and logic are acceptable. □Some analysis is conducted, the field's professional knowledge is understood and supplemented. 	<ul style="list-style-type: none"> □The report content has a complete organizational structure; there are new ideas or specific methods. □There are in-depth and insightful analysis and comparison; the field's professional knowledge is used skillfully. 	10		
Topic innovation	<ul style="list-style-type: none"> □The report is not very relevant to the course or its main point, and lacks the institutional policies, cases, or practices of 	<ul style="list-style-type: none"> □The report is related, but the topic lacks focus, or there are several topics with little relevance, and fails to 	<ul style="list-style-type: none"> □The report has focused on the relevant points, with cases or literature review and fieldwork. 	<ul style="list-style-type: none"> □The report is related to the course and focuses on a specific topic, exploring the policies, cases, and practices of the actual 	10		

	the actual organizations.	explore in depth.		institutions.		
Time management and Audience response,	<input type="checkbox"/> More than or less than 5 minutes. <input type="checkbox"/> No audience questions.	<input type="checkbox"/> More than or less than 3-5 minutes. <input type="checkbox"/> One audience question.	<input type="checkbox"/> More than or less than 1-3 minutes. <input type="checkbox"/> Some audience questions (2-3 times).	<input type="checkbox"/> More than or less than 1 minute. <input type="checkbox"/> Lively questions (more than 4 times).	10	

Note: Please check (✓) one or two levels for each evaluation indicator, and calculate the total score after averaging or weighting; written comments are also welcome.

Thanks to the Capstone Course Subsidiary Program provided by the Department of Civic Education and Leadership in the Spring semester of 2024.



Example (2) Project Report Rubric

Grading criteria	Excellent (80-100 points)	Good (60-80 points)	Acceptable (40-60 points)	Needs improvement (0-40 points)
1. Topic and Content (40%)	<ol style="list-style-type: none"> 1. Focus on the topic of photoelectricity and explore it in depth. 2. Have rich content of research motivation, experimental method, and research results. 3. Have a complete logical structure and coherence in the report content. 4. Have in-depth data analysis, comparison, discussion, and evaluation. 	<ol style="list-style-type: none"> 1. The research topic is related to the topic of photoelectricity, but not explored in depth. 2. There are research motivation, experimental method, and research results, but the content is not clear enough. 3. The report content has some logical structure and coherence. 4. There are data analysis, comparison, discussion, and evaluation, but not deep or clear enough. 	<ol style="list-style-type: none"> 1. The research topic is somewhat related to the optoelectronic field, but there is no in-depth discussion. 2. The research motivation, experimental method and research results are less and unclear. 3. The report content is acceptable, but the logic organization and coherence are poor. 4. Only preliminary data analysis, comparison discussion and evaluation are done. 	<ol style="list-style-type: none"> 1. The topic is not related to optoelectronics. 2. The research data is insufficient and there are no research results. 3. The report content is incomplete, lacking logic organization and coherence. 4. No data analysis, comparison discussion and evaluation are done.
2. Poster Production (30%)	<ol style="list-style-type: none"> 1. The poster layout is reasonable, the font is clear, and it makes people feel good visually and understand at a glance. 2. There are appropriate charts to help understand. 3. There are no typos and the symbols are correct. 	<ol style="list-style-type: none"> 1. The poster layout and font presentation are ordinary, with no obvious errors. 2. There are charts, but they are not clear enough. 3. There are about 1-2 errors in typos or symbols. 	<ol style="list-style-type: none"> 1. The poster layout and font presentation are acceptable. 2. There are charts, but some have low relevance to the research. 3. There are about 3-5 errors in typos or symbols. 	<ol style="list-style-type: none"> 1. The poster layout and font presentation are poor, unclear and have obvious errors. 2. There is no chart presentation, or the chart presentation is inappropriate. 3. There are more than 6 errors in typos or symbols.
3. Presentation Style (30%)	<ol style="list-style-type: none"> 1. Speak clearly and in an organized manner so that the listener can easily understand. 2. The volume and intonation are clear. Adjust the speed according to the listener's response and guide the content appropriately. 3. Time control is within 8-10 minutes. 	<ol style="list-style-type: none"> 1. The spoken language is clear and coherent, so that the audience can understand. 2. The volume and intonation are clear, but occasionally read according to the script, and occasionally there are auxiliary guiding content. 3. Time control is poor, about 6-8 minutes or 10-12 minutes. 	<ol style="list-style-type: none"> 1. The spoken language is scarce or unclear, and some explanations make people miss the point. 2. The volume and intonation are acceptable, but about half of the time there is a situation of reading according to the script, and there is almost no auxiliary guidance content. 3. Time control is poor, about 4-5 minutes. 	<ol style="list-style-type: none"> 1. Spoken language is sparse and incoherent, making it difficult for the audience to understand and miss the point. 2. Volume and tone are monotonous, almost as written, and there is no auxiliary guide content. 3. Time control is poor, about 2-4 minutes.

Thanks to the Capstone Course Subsidiary Program provided by the Undergraduate Program of Vehicle and Energy Engineering in the Spring semester of 2024.

Example (3) Evaluation Scale for Interpersonal Communication and Teamwork

Evaluation level evaluation items	4 Excellent	3 Proficient	2 Meet basic requirements	1 Need improvement
1.Listening, questioning and dialogue discussion.	Listen, interact, discuss, and guide all team members to contribute insights to reach group consensus with courtesy and respect.	Listen, interact, discuss, and offer personal opinions courteously and respectfully.	Able to listen politely and respectfully, and be guided by others to bring personal opinions to participate in discussions.	Unable to listen respectfully or participate in group interactions and discussions.
2.Group division and responsibility undertaking.	Able to actively participate in the division of labor discussions, coordinate and integrate the opinions of the group, and share responsibilities appropriately.	Actively participate in the division of labor discussions, accept the group consensus, and be willing to share responsibilities.	Able to participate in the division of labor discussions, willing to accept group consensus and share responsibilities.	Did not participate in group division of labor discussions or ignore group consensus or refuse to share responsibilities.
3.Information sharing and task understanding.	Can clearly grasp the group project goals and proactively share all kinds of information.	Can roughly grasp the group project goals and be willing to share all kinds of information.	Able to grasp the goals of the group plan and share various information.	Unable to grasp the group project goals or refuse to share various information.
4.Collaborative execution and goal achievement.	Can encourage and facilitate teamwork, and often take care of the progress of the members in the group, to achieve the expected goals.	Can participate in teamwork, complete assigned tasks properly, and achieve expected goals.	Able to participate in group work, but only need to be reminded or assisted by others to complete the task.	Unable to participate in group work or complete individually assigned tasks.
5.Online communication and etiquette.	Write or reply online without grammar, spelling, or other errors, interact politely, and facilitate communication.	Write or reply online with few grammar, spelling, or other errors, and interact politely to communicate.	Interact politely online, but often make grammar, spelling, or other errors in writing or replying, which can cause misunderstandings.	Writing or replying online with many grammar, spelling, or other errors, or interacting impolitely, disrespectfully, or rudely, hinders communication.

Thanks to the Capstone Course Subsidiary Program provided by the Bachelor Degree Program of Performing Arts in the Fall semester of 2024.