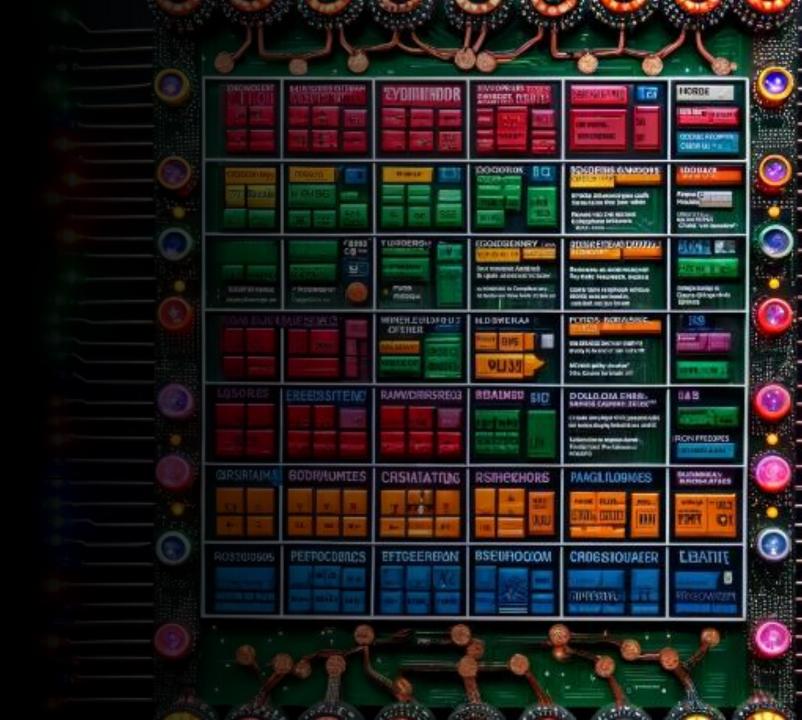# Rubrics
(Version 1.0)

28.05.2024

CC-BY-SA-NC

To the Teacher:

Assessment is a challenging task because it is always influenced by subjective factors to some extent. It is therefore recommended to define the assessment criteria in advance, so that the student knows what he/she is expected to achieve in the assignment and how the different evaluation criteria relate to each other. The assessment criteria clarify the learning objectives and provide additional information on what is being expected and valued from the task. At the same time, the teacher's assessment work becomes easier.

These tables have been prepared by a team of experts and teachers from Laurea UAS to support your work. Members of the team: Tuija Marstio, Anssi Mattila, Mervi Niemelä, Pirjo Pohjasniemi ja Pirjo Tiirikainen.

They are available for you in the Canvas LMS under Laurea UAS. You can use them as they are or modify them to suit with your assignments.

Version 1.0 (28.5. 2024) CC-BY-SA-NC 4.0

Rubrics

1. Development Project Report 100p 50% 1.0
2. Essay 100p 50% 1.0
3. Group work participation 100p 50% 1.0
4. Learning Diary 100p 50% 1.0
5. Online discussion 100p 50% 1.0
6. Opposition 100p 50% 1.0
7. Oral presentation 100p 50% 1.0
8. Peer evaluation 100p 50% 1.0
9. Short essay 100p 50% 1.0
10. Student's Self-Evaluation 100p 50% Completed/Incomplete 1.0

Development Project Report 100p 50% 1.0

CRITERIAS AND WEIGHT (%)		Development Setting (50%)	Theoretical Framework (35%)	Written output (15%)
RATING DESCRIPTION		The purpose, objectives, development tasks, and development questions of the development setting have been defined. Methodological solutions have been used to promote a development target that is usable in the working life.	Theoretical framework encompasses the use of sources, professional terminology, and the compilation of information.	The written output includes structure, adherence to the task, writing style, and language proficiency.
RATINGS (%)	**Excellent, 5 (100%)**	The development setting is clear, justified, and relevant. The objectives are realistic and achievable. Tasks and questions are defined precisely. The methods are suitable and effective. The benefit of the development setting is significant.	Theoretical framework extensively utilizes current and reliable sources critically and reflectively. Concepts are used precisely within the theoretical framework. The presented information is profound and coherent. New perspectives are generated by leveraging information from the sources.	The structure of the report is clear and logical. It excellently addresses the given task. The text flows smoothly and is error-free. The language use is appropriate and diverse. Figures and tables are appropriately labeled and integrated into the text. The report is well-polished in appearance.
	Good, 3 (75%)	The development setting is clear and justified. The objectives are achievable. Tasks and questions are defined. The methods are suitable. The benefit of the development setting is visible.	The theoretical framework includes several relevant sources justifiedly. The use of concepts is mostly accurate. The theoretical framework is well-structured. The presented information is coherent.	The structure of the report is clear and logical. It corresponds well to the given task. The text flows smoothly and is error-free. The language use is appropriate. Figures and tables are labeled and integrated into the text. The report is neatly presented in appearance.
	Satisfactory, 1 (50%)	The development setting is defined. Some objectives are achievable. Tasks and questions are narrow. Methods are partially suitable. The benefit of the development setting is minimal.	The theoretical framework utilizes some relevant sources. The use of concepts is imprecise. The structuring of the theoretical framework is satisfactory. The presented information is somewhat coherent.	The structure of the report is fairly clear. Partially addresses the task. The text is imprecise and/or difficult to comprehend. Language use is limited. Figures and tables are labeled and integrated into the text. The report lacks polish in appearance.
	Fail	Does not meet the minimum passing level requirements.		

Essay 100p 50% 1.0			
CRITERIAS AND WEIGHT (%)	**Knowledge base (40%)**	**Reflection and personal thinking (40%)**	**Written work (20%)**
RATING DESCRIPTION	The knowledge base includes the use of sources and professional concepts, as well as the compilation of information.	Reflection and personal thinking include dialogue between the knowledge base and personal thinking, argumentation, analytical approach, and expression of one's viewpoint.	Written work includes structure, adherence to the task, style of writing, and mastery of language.
RATINGS (%) — **Excellent, 5 (100%)**	The student utilizes diverse, current, and reliable sources critically. Mastery of concepts and matters is thorough, and the student produces consistent and profound knowledge. The source citations are impeccable and based on verifiable information.	The student presents a convincing and well-reasoned view of the subject matter. The student demonstrates critical and independent thinking, addressing the topic by relying on his/her thoughts and examples. The student argues persuasively with factual reasoning, and the claims are carefully considered, generating new knowledge and perspectives. The dialogue between the knowledge base and personal thinking is reflective and analytical.	The structure is clear, coherent, and meets the requirements of the assignment. The student takes into account the audience and maintains a neutral, concrete, and objective writing style. The text shows clear logical relationships between the entities. The text is clear, careful, and concise, and demonstrates a strong command of language. The format is appropriate.
Good, 3 (75%)	The student utilizes current and reliable sources. Concepts and matters are well-managed. The student produces consistent information. The source citations are mainly in order and are based on verifiable information.	The student presents a reasoned view on the topic at hand. The student demonstrates independent thinking and addresses the topic with examples. The student argues based on facts, and the claims are well-considered. The dialogue between the knowledge base and personal thinking is reflective.	The structure is consistent and meets the requirements of the assignment. The student takes into account the audience and maintains a neutral and objective writing style. The text shows logical relationships between the entities. The text is mainly careful and demonstrates language proficiency. The format is appropriate.
Satisfactory, 1 (50%)	The student utilizes current sources. Concepts and matters are mostly well-managed. The student produces information and creates perspectives. The source citations are mainly in order.	The student presents a view on the topic at hand, relying on examples. The student's claims are partly justified. There is a dialogue between the knowledge base and personal thinking.	The structure is clear and mostly meets the requirements of the assignment. The student maintains an objective writing style. The text shows relationships between the entities. The text is clear. The format is mainly appropriate.
Fail	Sources are not utilized. There are clear deficiencies in the mastery of concepts and matters. The creation of knowledge is shaky, inconsistent, and incomplete.		

Group work participation 100p 50% 1.0

CRITERIAS AND WEIGHT (%)		Contribution (60%)	Attitude (20%)	Communication (20%)
RATING DESCRIPTION		Contribution includes effectiveness, decision-making, problem-solving, and teamwork skills.	Attitude includes commitment, adaptability, and responsibility.	Communication includes expression and interaction.
RATINGS (%)	**Excellent, 5 (100%)**	The student demonstrates effectiveness, the ability to work in a team, and produces high-quality work. He/She actively participates in decision-making and problem-solving, presenting alternative solutions, new ideas, and perspectives. The collaboration skills and ability to adapt to different working methods stand out and promote co-operation.	The student supports teamwork with a committed, positive, and constructive attitude. He/She demonstrates clear self-direction, responsibility, and leadership, which facilitates the success of the entire group. He/She conscientiously follows rules and schedules. The student emphasizes fair treatment, places the group's interest ahead of individual interests, and actively seeks common solutions. He/She is able to adapt own actions to improve the group's atmosphere and outcomes. He/She handles potential conflicts responsibly, respectfully, and constructively, and clearly understands his/her role in the group.	The student uses clear, understandable, professional, and purposeful expression. He/She respects and considers others' views and opinions in communication, and keeps own communication current and fair. The student avoids improprieties. His/Her communication promotes open, interactive, and effective information exchange within the group.
	Good, 3 (75%)	The student demonstrates effectiveness and the ability to work in a group. He/She actively participates in decision-making and problem-solving. The collaboration skills and ability to adapt to different working methods enhance co-operation.	The student supports teamwork with a committed, positive, and constructive attitude. He/She shows self-direction, enhancing the success of the entire group. He/She adheres to rules and schedules. The student prioritizes the group's interest over individual interests and seeks common solutions. He/She can adapt own actions to improve the group's atmosphere and outcomes. The students handles potential conflicts constructively and clearly understands own role in the group.	The student uses professional and purposeful expression. He/She respects and considers others' views and opinions in communication, and keeps own communication current. The student avoids improprieties. His/Her communication promotes effective information exchange within the group.
	Satisfactory, 1 (50%)	The student demonstrates the ability to work in a group. He/She participates in decision-making and problem-solving. The collaboration skills promote teamwork.	The student supports teamwork with a positive attitude. He/She adheres to rules and schedules. The student prioritizes the group's interest over individual interests. He/She can adapt own actions when necessary. He/She handles potential conflicts constructively and clearly understands own role in the group.	The student uses professional expression. He/She respects and considers others' views in communication. The student avoids improprieties. His/Her communication enhances information exchange within the group.

Learning Diary 100p 50% 1.0

CRITERIAS AND WEIGHT (%)	The interpretation of learnt things (40%)	Reflection, creativity and originality (40%)	Structure, presentation and progression (20%)
RATING DESCRIPTION	The interpretation of learnt things involves organizing and analyzing them, as well as making use of literature.	Reflection refers to the view of one's own skills development and the structuring of new knowledge in relation to one's own experiences. Creativity and originality refer to the student's presentation of their perspectives and insights.	In this part the structure, presentation and progression are evaluated.
RATINGS (%) **Excellent, 5 (100%)**	The student demonstrates a deep understanding of the topic, can evaluate it and relate it to the themes of the study. In the learning diary, the student expresses thoughts clearly and arguments convincingly. The student organises and analyses the lessons learned consistently, and makes extensive use of literature in writing the learning diary.	Deep learning is evident in the diary. The learned things are consistently related, and the student analyzes them in relation to the previous knowledge. The diary contains deep reflection on learning and its application to practice. The student brings out his/her own perspectives and insights. The diary demonstrates creative thinking and originality.	The presentation is versatile and enriches the content of the learning diary. It includes additional material, such as images, links, or external resources, that support learning and views. The diary progresses clearly and in a structured manner. Topics and thoughts are clearly organized and well planned. The way of progression fits well with the topic.
Good, 3 (75%)	The student demonstrates an understanding of the topic, can apply it, and makes summaries of it. The student explains and classifies learned things. The student utilizes literature to some extent in writing the learning diary.	Learning is visible in the diary. The learned things are somewhat linked, and the student combines them with the previous knowledge. The diary summarizes the student's skills development and its application to practice. The student brings out some of his/her perspectives and insights. The diary shows some elements of creativity and originality.	The presentation supports and enriches the content. It includes some additional material that supports learning. The diary progresses mainly clearly and in a structured manner. Topics and thoughts are organized, but some ambiguities may occur. The way of progression fits the topic.
Satisfactory, 1 (50%)	The student demonstrates understanding of the topic and can describe it. The student recognizes learned things and refers to them. In writing the learning diary, the student uses little or no source material.	Learning is partially visible in the diary. Learned things and their relationship to the student's previous knowledge have been identified. The student describes to some extent the development of skills. There are few personal perspectives. The diary shows little creativity.	The presentation is one-sided and poorly supports the objectives of the learning diary. The structure of the diary is somewhat fragmented, and its progression opens poorly to the reader. Topics and thoughts mix without a clear plan or timeline.
Fail	Does not meet the minimum passing level requirements.		

Online discussion 100p 50% 1.0

CRITERIAS AND WEIGHT (%)		Participation and communication skills (40%)	Knowledge (40%)	Argumentation (20%)
RATING DESCRIPTION		Participation and communication skills include activity, attitude, and communicative expression.	Knowledge includes the recognition and management of the subject matter and relevant information.	Argumentation involves logic, persuasiveness, comprehensibility, and relevance.
RATINGS (%)	Excellent, 5 (100%)	The number and scope of messages closely align with the given instructions. All messages have been sent well in advance within the provided timeline. The attitude is positive, demonstrating a clear interest in the subject matter and the discussion. In the messages, takes into consideration the content produced by others extensively and respond to them, advancing the conversation. The expression is professional, grammatically correct, polite, constructive, and concise.	Demonstrates clear knowledge of the relevant subject matter and substance essential to the task. Provides a comprehensive response to the given task using relevant and up-to-date information. Generates new perspectives and ideas.	The presented claims are logically and comprehensibly justified. The claims are based on factual information from current and relevant sources. When necessary, can identify weaknesses in the argumentation. Stays on topic and can provide concrete examples and highlight relevant ones.
	Good, 3 (75%)	The number and scope of messages correspond to the given instructions. The required messages have been sent within the provided timeline. The attitude is positive, demonstrating interest in the subject matter and the discussion. In the messages, takes into account the content produced by others. The expression is professional, grammatically correct, polite, constructive, and concise.	Demonstrates knowledge of the relevant subject matter essential to the task. Responds to the given task using relevant and up-to-date information. Generates new perspectives and ideas.	The presented claims are justified comprehensibly. The claims are based on factual information and sources. Stays on topic and can provide concrete examples.
	Satisfactory, 1 (50%)	The number and/or scope of messages do not fully comply with the given instructions. The level of activity is low compared to the assigned task. The required messages have been sent outside the provided timeline. The messages partially take into account the content produced by others. The expression is grammatically correct, polite, and professional.	Identifies relevant subject matter essential to the task. The response to the task contains relevant information.	The presented claims are mostly justified. Stays on topic and provides examples.
	Fail	Does not meet the minimum passing level requirements.		

Opposition 100p 50% 1.0

CRITERIAS AND WEIGHT (%)		Content of opposition (60%)	Communication (20%)	Written assessment of the opposition (20%)
RATING DESCRIPTION		Opposition involves evaluating the subject of opposition and providing feedback.	Communication includes both manner of expression and content.	An evaluation of the subject entails its structure and writing style.
RATINGS (%)	Excellent, 5 (100%)	The different aspects of the opposition's subject have been thoroughly assessed, considering both strengths and weaknesses. The feedback provided is constructive, critical, relevant, and well-founded. It offers added value and new perspectives. The justifications make use of factual information and pertinent sources.	The expression is considerate, professional, logical, precise, and effective in its content. The opponent fosters discussion while maintaining constructive and respectful dialogue.	The text structure is clear and logical. The writing style is objective, professional, and concrete. The text is careful, concise, and grammatically flawless.
	Good, 3 (75%)	The various aspects of the opposition's subject have been evaluated well, taking into account both strengths and weaknesses. The feedback provided is mostly constructive, critical, relevant, and justified. It offers added value and new perspectives. The justifications make use of factual information and pertinent sources.	The expression is attentive, professional, and logical in its content. The opponent sparks discussion while maintaining constructive and respectful dialogue.	The text structure is mostly clear and logical. The writing style is mostly objective, professional, and concrete. The text is careful, concise, and almost grammatically flawless.
	Satisfactory, 1 (50%)	The various aspects of the opposition's subject have been assessed, considering strengths and weaknesses. The feedback provided is constructive and relevant. It mostly offers general observations. The justifications make use of factual information and pertinent sources.	The expression is mostly attentive to the subject and professional in its content. The opponent aims to stimulate discussion while striving to maintain constructive and respectful dialogue.	The text structure is mostly clear and logical. The writing style is mostly objective and professional. There might be some inaccuracies and occasional errors in the text. The text is fairly grammatically correct.
	Fail	Does not meet the minimum passing level requirements.		

Oral presentation 100p 50% 1.0

CRITERIAS AND WEIGHT (%)		Structure and content (40%)	Visuals and presentation material (40%)	Mode of expression and targeting of the presentation (20%)
RATING DESCRIPTION		The structure of the presentation is evaluated for its coherence and progression. The content reflects familiarity with the subject and its mastery.	In visuality, the illustrativeness, utilization, and control of presentation material are evaluated.	Mode of expression includes the use of voice and speech as well as interaction. Targeting refers to taking into account the target audience.
RATINGS (%)	**Excellent, 5 (100%)**	The structure of the presentation is very clear and consistent. The introduction presents the content logically and interestingly, taking into account the level of understanding of the audience. The content is carefully and comprehensively selected, and presented concisely and consistently. The conclusion at the end of the presentation brings the presentation together. The presenter demonstrates a deep understanding of the topic. The presentation is in accordance with the instructions. Timing of it is excellent and well implemented. The technology required for the presentation is under control.	The presentation material has been finished carefully. It supports and illustrates the oral presentation excellently. The presenter knows hot to use the presentation material. Copyrights and possible sources of presentation material have been mentioned carefully. The visual elements are achievable and in accordance with the assignment.	The mode of expression is extremely clear and naturally targeted to the listeners. The expression is convincing and knowledgeable. Interaction with the listeners has been taken into account according to the assignment instructions.
	Good, 3 (75%)	The structure of the presentation is clear and consistent. The start introduces the whole logically. The content has been chosen somewhat precisely and comprehensively. They are presented concisely and consistently. The conclusion is appropriate. The presenter shows understanding of their topic. The presentation responds to the assignment. Time management is well implemented. The technology required by the presentation is under control.	The presentation material has been finished well. The material supports and illustrates the oral presentation well. The use of presentation material is controlled. Copyrights and possible sources of presentation material have been mentioned. Visualization is in accordance with the assignment and achievable.	The expression is clear and targeted to the listeners. The expression is knowledgeable. Interaction with the listeners has been taken into account according to the assignment.
	Satisfactory, 1 (50%)	The structure of the presentation opens poorly to the listener. The start introduces the whole. The content is imprecise and scarce. Essential things in the presentation have been tried to be condensed and consistent. The conclusion is appropriate. The presenter's understanding of the topic remains somewhat unclear. The presentation corresponds mainly to the assignment. Time management is implemented. The technology required by the presentation is partly under control.	The presentation material is partly unfinished. The material somewhat illustrates the oral presentation. The control of the use of presentation material is partly deficient. Copyrights and possible sources of presentation material have been mentioned. Visualization is in accordance with the assignment and mainly achievable.	The expression is clear and considers the listeners. The expression is partly knowledgeable. Interaction with the listeners has been mainly taken into account according to the assignment.
	Fail	Does not meet the minimum passing level requirements.		

Peer evaluation 100p 50% 1.0

CRITERIAS AND WEIGHT (%)		Evaluation of the content (70%)	Linguistic expression (15%)	Structure (15%)
RATING DESCRIPTION		The evaluation of content consists of examining the aspects according to the given instructions, the accuracy, precision, and verifiability of feedback, as well as a justified suggestions for improvement.	Linguistic expression consists of clarity, style, and tone of expression.	The structure is formed by the organization and consistency of the feedback.
RATINGS (%)	**Excellent, 5 (100%)**	Peer evaluation covers the entire assignment and focuses on its essential content. Feedback (rationale for assessment) is presented accurately and precisely, and it is verifiable. The feedback includes justified improvement suggestions that are concrete, realistic, and relevant to the development of the assessed subject.	The linguistic expression of the feedback is clear and precise. Its style and tone are respectful, polite, professional, and considerate of the subject.	The structure of the feedback supports comprehension and is consistent.
	Good, 3 (75%)	Peer evaluation considers the content of the assignment and is mostly focused on essential content. The feedback is mostly accurate and precise and can be verified. The feedback includes improvement suggestions that are mostly realistic and relevant to the development of the subject.	The linguistic expression of the feedback is clear and understandable. Its style and tone are polite and professional.	The structure of the feedback is mostly logical and supports comprehension.
	Satisfactory, 1 (50%)	The peer evaluation focuses on less relevant content regarding the assignment instructions. The feedback is generic and/or lacks verifiability. Improvement suggestions are missing or they lack specificity and realism.	The linguistic expression of the feedback is mostly clear and understandable. Its style and tone are mostly polite but may contain unprofessional elements.	The structure of the feedback weakly supports comprehension.
	Fail	Does not meet the minimum passing level requirements.		

Short essay 100p 50% 1.0

CRITERIAS AND WEIGHT (%)		Knowledge base (75%)	Written output (25%)
RATING DESCRIPTION		The knowledge base includes the use of sources and professional terminology, as well as creating and compiling information.	The written output includes structure, relevance to the task instructions, writing style, and language proficiency.
RATINGS (%)	Excellent, 5 (100%)	The student utilizes diverse, current, relevant, and reliable sources. Mastery of concepts and issues is comprehensive. The student produces coherent, profound, and fully task-relevant information. Source citations are flawless and based on verifiable information.	The structure is clear, consistent, and meets the requirements of the task instructions. The student maintains a neutral, concrete, and objective writing style. Clear logical relationships between components are evident in the text. The writing is clear, meticulous, concise, and demonstrates a strong command of language. The format is appropriate.
	Good, 3 (75%)	The student utilizes current, relevant, and reliable sources. Concepts and topics are well understood. The student produces coherent and task-relevant information. Source citations are mostly correct and based on verifiable information.	The structure is consistent and meets the requirements of the task instructions. The student maintains a neutral and objective writing style. Logical relationships between components are evident in the text. The writing is mostly careful and demonstrates language proficiency. The format is appropriate.
	Satisfactory, 1 (50%)	The student utilizes current sources. Concepts and topics are mostly understood. There may be inconsistencies and deficiencies in the information provided by the student regarding the task instructions. Source citations are mostly correct.	The structure is clear and mostly meets the requirements of the task instructions. The student maintains an objective writing style. Relationships between components are visible in the text. The writing is clear. The format is mostly appropriate.
	Fail	Does not meet the minimum passing level requirements.	

Student's Self-Evaluation 100p 50% Completed/Incomplete 1.0

CRITERIAS AND WEIGHT (%)		Goal achievement (20%)	Commitment, participation, and quality of work (20%)	Reflection on own learning (20%)	Self-direction and time management(20%)	Utilization of feedback (20%)
RATING DESCRIPTION		Student's assessment of his/her ability to achieve the course objectives and learning goals, and reflection on how well the student understood the key concepts and learning objectives of the course.	Evaluation of student's commitment throughout the course, assessment of the capability to generate high-quality work, and reflection on the application of learned concepts.	Evaluation of the capacity to reflect on own learning, assessment of own proficiency in recognizing strengths and areas for improvement, and reflection on the ability to apply the knowledge and skills acquired during the course.	Evaluation of the aptitude for self-directed learning and time management, assessment of the ability to establish clear goals, effectively organize tasks, manage own time, and reflection on how well the student maintained focus and balanced responsibilities.	Evaluation of the capacity to effectively utilize feedback, reflection on receiving feedback, and incorporating it into the learning process.
RATINGS (%)	**Complete (50%)**	A clear assessment of student's ability to achieve the course objectives and learning goals. Thoughtful reflection on how well the student grasped the key concepts and learning objectives of the course. Concrete examples or evidence supporting the assessment and reflection provided by the student. Analysis of strengths and areas for improvement in relation to the course objectives and learning goals.	A logical evaluation of student's commitment throughout the course, for example participation in discussions, group activities, and dedication to independent study. An objective assessment of the capability to generate high-quality work, such as essays, contributions to discussions, documentation, or performance in exams. Reflection on the application of learned concepts in practical assignments and the ability to effectively articulate and defend own perspectives.	A logical evaluation of the capacity to reflect on own learning journey throughout the course. Clear assessment of the proficiency in recognizing both own strengths and areas needing improvement. Reflection on the ability to apply the knowledge and skills acquired during the course to practical situations or contexts.	A logical evaluation of own aptitude for self-direction and proper time management. Reflection on the the ability to stay focused, set clear, achievable goals, and effectively organize own learning process. Reflection on the ability to plan tasks, prioritize them appropriately, and establish a balanced schedule. A logical, clear reflection on own work habits, ability to adjust own approach as needed to optimize own time and produce high-quality work.	Clear evaluation of the capacity to effectively utilize feedback received throughout the course. Reflection on how well the student receives feedback, including openness to constructive criticism and willingness to learn from it. Consideration of how the student incorporates feedback into his/her learning process to improve understanding, skills, and performance.
	Needs improvement	Needs completion concerning the defined criterion descriptions.				

Lähteitä

- Brookhart, S. M., & Chen, F. (2015). The quality and effectiveness of descriptive rubrics. *Educational Review (Birmingham)*, *67*(3), 343–368. https://doi.org/10.1080/00131911.2014.929565

- Dawson, P. (2017). Assessment rubrics: towards clearer and more replicable design, research and practice. *Assessment and Evaluation in Higher Education*, *42*(3), 347–360. https://doi.org/10.1080/02602938.2015.1111294

- Hirsjärvi, S., Remes, P. & Sajavaara, P. 2015. Tutki ja kirjoita. Helsinki: Tammi.

- Hytönen, E. & Kostamo, P. 2024. Viestinnän materiaaleja.

- Kielijelppi.Mitä erinomaiselta oppimispäiväkirjalta voi odottaa? Kielijelppi – Språkhjälpen. Helsingin yliopisto. Luettu 13.4.2024. https://blogs.helsinki.fi/kielijelppi/mita-erinomaiselta-oppimispaivakirjalta-voi-odottaa-2/

- Panadero, E., Jonsson, A., Pinedo, L., & Fernández-Castilla, B. (2023). Effects of Rubrics on Academic Performance, Self-Regulated Learning, and self-Efficacy: a Meta-analytic Review. *Educational Psychology Review*, *35*(4), 113-. https://doi.org/10.1007/s10648-023-09823-4