

PedagoReLearn Proposal – Rubric Alignment Summary

Course: CSCE 642 – Reinforcement Learning | Instructor: Dr. Sharon

Due: October 6, 2025

This summary outlines how the *PedagoReLearn Project Proposal* satisfies each rubric criterion in the CSCE 642 course project guidelines.

Rubric Item	Proposal Section	Evidence Summary	Status
Team Members	Section I	Both authors with UINs, departments, and emails clearly listed.	✓ Fully Met
Proposed Starting Point	Section II	Existing German-language environment, toolchain, and confirmation no external dependencies.	✓ Fully Met
Project Plan and Rationale	Sections III–V	Explains motivation, Dewey grounding, SARSA with state aggregation, and environment setup.	✓ Fully Met
Sequential Nature	Section III-C	Subsection 'Why This Problem Is Sequential' describes dependencies, mastery, and forgetting.	✓ Fully Met
State Space Definition	Section IV-A	Defines mastery and recency, includes total count (13,824) with explanation.	✓ Fully Met
Action Space Definition	Section IV-B	Outlines teach, quiz, review, and no-op actions with purpose.	✓ Fully Met
Transition Function	Section IV-C	Probabilistic learner model and forgetting dynamics following BKT and Ebbinghaus.	✓ Fully Met
Reward Function	Section IV-D	Defines quiz, efficiency, and terminal rewards; $\gamma=0.95$ justified.	✓ Fully Met
Simplest Possible First Result	Section VII	Environment + SARSA + one aggregation + baselines + plots.	✓ Fully Met
Baselines and Comparison	Section VI	Random and fixed-curriculum baselines plus optional heuristic spaced repetition.	✓ Fully Met
Stretch Goals	Section VIII	Optional aggregation study, heuristic baseline, sensitivity analysis, visualization.	✓ Fully Met
Timeline and Risks	Section IX	Detailed week-by-week plan with buffer and fallback strategy.	✓ Fully Met
Reproducibility	Section X	YAML configs, CSV logs, version control, README documentation.	✓ Fully Met
Related Work and Citations	Section XI	Cites Dewey, BKT, DKT, VanLehn, Rafferty et al. with IEEE formatting.	✓ Fully Met
Expected Contributions	Section XII	Distinguishes practical, theoretical, and educational outcomes.	✓ Fully Met

Status Legend: ✓ Fully Met | ● Partial | ● Missing