

Assignment 1 Rubric (10 Points Total)

Texas Tech University

Department of Computer Science

CS5374 – Software Verification and Validation

Spring 2026

Overview

Category	Points	Description
Assignment tasks	3	Part A (functional/structural testing) + Part B (LangSmith tracing) per Assignment1-CS5374-Spring2026
Course project tasks	3	Vague-spec agent, date-aware crawler, evidence validator
Integration with Automata course project	3	data-structures: spec.js, VAGUE_SPEC_ANALYSIS.md, README_CLARIFICATIONS_AC.md
Submission and quality	1	Completeness, clarity, runnability
Total	10	

1. Assignment Tasks (3 points)

Based on [Assignment1-CS5374-Spring2026.pdf](#) / [Assignment1-CS5374-Spring2026.md](#).

Criterion	Pts	Evidence
Part A – Testing		
Install and run shopping-cart repo; run existing tests; snapshots	0.5	Screenshots of install and test execution
Baseline coverage (Coverage.py); design 20 functional tests (EP table)	0.5	Coverage report; EP specification table
Implement 20 functional tests; coverage after functional tests	0.5	Test code; coverage report
Structural tests to reach $\geq 80\%$ statement coverage; final coverage report	0.5	Structural tests; final coverage $\geq 80\%$
Part B – LangSmith		
Quiz 1 source with LangSmith tracing enabled; execution screenshot	0.25	project/src/agent/quiz1_langsmith_graph.py (or equivalent); screenshot
LangSmith trace report and chain count	0.25	Screenshot(s) of trace; stated number of chains

Total for Assignment tasks: 3 points.

2. Course Project Tasks (3 points)

Deliverables in the CS5374 project repository.

Criterion	Pts	Artifact	Description
Vague-spec agent	1.0	project/src/agent/vague_spec_agent.py	LangGraph agent that crawls .tex (e.g. TOT) and detects vague specifications; produces clarifications or questions. Uses Granite/Ollama or configured LLM.
Date-aware crawler	1.0	project/src/agent/date_aware_crawler.py	Crawler that extracts article dates and writes structured output (e.g. allowlist, date extraction, multi-source handling).

Evidence validator	1.0	project/src/agent/evidence_validator.py	Validator that scores/ranks articles (e.g. keyword relevance, priority); reads from configured posts dir and writes validated output (e.g. _data/important_articles.json).
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Grading: Each artifact present, runnable, and matching the described purpose: full points. Partial or non-runnable: partial credit. Missing: 0 for that artifact.

Total for Course project tasks: 3 points.

3. Integration with Automata Course Project (3 points)

Deliverables in the **data-structures** (Automata) repository.

Criterion	Pts	Artifact	Description
Aho-Corasick spec	1.0	data-structures/spec.js	Test specification for Aho-Corasick (e.g. dictionary, example text, expected matches with 1-based end indices). Export format suitable for a test runner (e.g. module.exports).
Vague-spec analysis	1.0	data-structures/tot/VAGUE_SPEC_ANALYSIS.md	Output of vague-spec agent on TOT .tex files: summary (files analyzed, files with vague specs), per-file vague items and clarifications.
README clarifications	1.0	data-structures/README_CLARIFICATIONS_A C.md	Clarifications for the Aho-Corasick algorithm (e.g. suffix link, dictionary-suffix link, complexity, example) for readers of the spec/README.

Grading: Each artifact present and consistent with the integration (spec matches algorithm, analysis matches agent output, clarifications align with spec/README): full points. Partial or inconsistent: partial credit. Missing: 0 for that artifact.

Total for Integration with Automata: 3 points.

4. Submission and Quality (1 point)

Criterion	Pts	Description
Completeness	0.5	All required files and deliverables submitted; links/paths correct; no placeholders where real content is required.
Clarity and runnability	0.5	Instructions or README sufficient to run agents/crawler/validator; code runs without unexplained errors; screenshots/reports readable.

Total for Submission and quality: 1 point.

Summary Table

Category	Points
1. Assignment tasks (Part A + Part B)	3
2. Course project (vague_spec_agent, date_aware_crawler, evidence_validator)	3
3. Integration with Automata (spec.js, VAGUE_SPEC_ANALYSIS.md, README_CLARIFICATIONS_AC.md)	3
4. Submission and quality	1
Total	10

Reference Paths

- Assignment: [assignments/Assignment1-CS5374-Spring2026.md](#)
- Project agents: [project/src/agent/vague_spec_agent.py](#), [date_aware_crawler.py](#), [evidence_validator.py](#)

- Data-structures: data-structures/spec.js, data-structures/tot/VAGUE_SPEC_ANALYSIS.md, data-structures/README_CLARIFICATIONS_AC.md

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