



- **Learner Intake & Profiling Agent** converts raw student form data into a structured LearnerProfile (6 domain confidence scores + experience level + risk domains + analogy_map). Mock mode: keyword-based rule inference. Live: Azure OpenAI gpt-4o with JSON-schema prompt.
- **1.1 Learning Path Curator + 1.2 StudyPlan + Progress + Engagement Agents** – Curator maps AI-102 domains to 30+ MS Learn modules; priority-boosts risk domains; caps at 2x hours budget. StudyPlan uses Largest Remainder Method for a week-level Gantt schedule. Progress computes readiness = $0.55 \times \text{domain} + 0.25 \times \text{hours} + 0.20 \times \text{practice}$. Engagement agent generates a self-contained HTML email report sent via SMTP.
- **2.1 Assessment Builder + 2.2 Guardrail Verifier + 2.3 Scoring Engine** – 30-question bank (5 per domain \times 6 AI-102 domains, 3 difficulty levels). Domain-weighted random sampling via Largest Remainder allocation. Verifier: G-14 (≥ 5 Qs), G-15 (no duplicate IDs), G-16 (content filter), G-17 (URL trust). Scoring: per-domain breakdown, pass $\geq 60\%$. Assessment result feeds Block 3.
- **3.1 CertRecommendation Agent & Gap Analyzer + 3.2 Cert & Exam Planner** – GO threshold $\geq 70\%$ quiz score. If ready: exam logistics (AI-102 = 180 min, \$165 USD, Pearson VUE URL), 7-item booking checklist, next-cert suggestions (DP-100 / AZ-305 / AI-900). Not ready: targeted remediation plan listing weak domains → loops back to Block 1.1.