**Final Design Document for AI Prompting Course**

Marcus Taylor

University of North Texas

LTEC 6020 - Advanced Instructional Design: Models and Strategies

Dr. Michael Spector

December 1, 2024

**Goals:**
The primary goal of this course is to enable learners to master the art and science of AI prompting. The course equips participants with skills to design, analyze, and apply prompts effectively, allowing them to use AI for diverse tasks in professional and personal contexts.

**Objectives:**

1. Define and explain AI prompting principles, including their significance and application areas.
2. Construct AI prompts tailored to specific needs, emphasizing clarity, context, and precision.
3. Utilize advanced prompting techniques, such as chain-of-thought, role-based, and multi-turn methods.
4. Design and customize prompt templates for applications across industries.
5. Troubleshoot errors in prompt construction and refine prompts to improve AI responses.
6. Apply learned skills to real-world scenarios through structured activities and projects.

**Scope:**
This 8–10 hour self-paced online course spans eight modules, from foundational concepts to advanced techniques. Learners will engage with interactive content, practical exercises, and case studies. The course emphasizes real-world applications, making it relevant for diverse professional needs.

**Target Learners**

**Description:**
The course targets professionals, students, and enthusiasts with a basic understanding of digital tools but no prior experience in AI prompting. Participants come from fields such as education, healthcare, business, and creative industries.

**Prior Knowledge and Experience:**
Learners possess foundational digital literacy and are motivated to understand AI's role in enhancing workflows. The course assumes no prior knowledge of AI prompting but builds on learners' existing familiarity with basic problem-solving and communication skills.

**Educational Contexts:**
Hosted on Canvas LMS, the course supports independent, asynchronous learning. Modules are structured to accommodate diverse learning paces, with optional instructor support. Expected enrollment per cycle is 50–200 learners, with scalability options.

**Instructional Approach**

The course employs a **constructivist and experiential learning approach** combined with self-directed principles. Key elements include:

* **Guided Discovery:** Modules introduce concepts sequentially, building upon each other to foster understanding.
* **Hands-On Practice:** Learners engage in prompt creation, refinement, and troubleshooting exercises.
* **Reflection:** Activities encourage learners to connect theoretical concepts with their own professional contexts.
* **Case-Based Learning:** Real-world scenarios challenge learners to apply and adapt skills.
* **Adaptive Feedback:** Continuous feedback on quizzes, exercises, and projects enhances learning outcomes.

This approach aligns with adult learning principles, emphasizing relevance, autonomy, and practical application.

**Justification for the Instructional Approach**

The instructional design is informed by established theories and practices in education:

1. **Revised Bloom's Taxonomy:** Encourages higher-order thinking skills through creation, evaluation, and application (Anderson & Krathwohl, 2001).
2. **Constructivist Learning:** Active learning fosters deeper comprehension and retention (Jonassen, 1999; Wilson, 1996).
3. **Experiential Learning:** Tasks simulate real-world challenges, improving skill transfer (Kolb, 1984).
4. **Multimedia Learning Principles:** The use of diverse media supports effective knowledge acquisition (Mayer, 2014).
5. **Connectivism:** The integration of AI tools supports networked learning, emphasizing relevance in a digital age (Siemens, 2005).
6. **Self-Regulated Learning:** Promotes autonomy and goal-setting, key to adult education (Zimmerman, 2002).
7. **Instructional Design Models:** Frameworks like Merrill's principles ensure structured and effective instruction (Merrill, 2002).
8. **Community of Inquiry:** Encourages a balance of cognitive, teaching, and social presence, even in asynchronous settings (Swan & Ice, 2010).
9. **Interactive Scaffolding:** Tasks are sequenced to build learner confidence and competence (Reigeluth & Carr-Chellman, 2009).
10. **Authentic Modeling:** Real-world examples enhance relevance and engagement (West & Graham, 2007).

**Learning Resources and Activities**

**Resources:**

* **AI Tools:** Access to ChatGPT, Claude AI, Google Gemini, and others.
* **Instructional Materials:** Videos, articles, interactive guides, and case studies.
* **Templates and Frameworks:** Pre-designed templates for prompt engineering.

**Activities:**

1. **Quizzes:** Assess foundational understanding after each core module.
2. **Prompt Creation:** Exercises to develop and refine AI prompts based on real-time feedback.
3. **Case Studies:** Application of learned techniques to address authentic problems.
4. **Final Project:** Learners design and test prompts for specific use cases, documenting results.
5. **Troubleshooting:** Activities to identify and correct errors in prompt design.
6. **Reflection Exercises:** Learners evaluate their progress and identify areas for further growth.

**Assessment**

**Formative Assessments:**

* Quizzes evaluate comprehension of core principles.
* Exercises focus on iterative learning and skill refinement.
* Reflection journals encourage self-assessment.

**Summative Assessments:**

* **Final Project:** A comprehensive prompt design task tested in a real-world application, assessed for clarity, relevance, and impact.
* **Comprehensive Exam:** Covers all modules, focusing on advanced understanding and application.
* **Course Reflection:** Learners articulate key takeaways and future applications.

**Grading Structure:**

* Quizzes: 20%
* Case Studies: 15%
* Final Project (Draft and Final): 45%
* Troubleshooting: 10%
* Exam and Reflection: 10%

This approach ensures learners gain theoretical knowledge and practical expertise, equipping them to utilize AI tools effectively.

**References**

Anderson, L. W., & Krathwohl, D. R. (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives.* Longman.

Jonassen, D. H. (1999). *Designing constructivist learning environments.* Springer.
Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development.* Prentice Hall.

Mayer, R. E. (2014). *The Cambridge handbook of multimedia learning* (2nd ed.). Cambridge University Press.

Merrill, M. D. (2002). First principles of instruction. *Educational Technology Research and Development, 50*(3), 43–59. <https://doi.org/10.1007/BF02505024>

Reigeluth, C. M., & Carr-Chellman, A. A. (2009). *Instructional-design theories and models: Building a common knowledge base.* Routledge.

Siemens, G. (2005). Connectivism: A learning theory for the digital age. *International Journal of Instructional Technology and Distance Learning, 2*(1), 3–10.

Swan, K., & Ice, P. (2010). The community of inquiry framework ten years later. *Internet and Higher Education, 13*(1–2), 1–8.

West, R. E., & Graham, C. R. (2007). Benefits and challenges of using live modeling in design education. *TechTrends, 51*(3), 22–28.

Wilson, B. G. (1996). Constructivist learning environments. In D. H. Jonassen (Ed.), *Handbook of research on educational communications and technology* (pp. 3–19). Lawrence Erlbaum Associates.

Zimmerman, B. J. (2002). Becoming a self-regulated learner: An overview. *Theory into Practice, 41*(2), 64–70.