



# From Keywords to Natural Language: Integrating AI into a First-Year Information Literacy Course

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# GENE 101: Information Literacy

GENE 101 equips students with critical research skills for academic and professional success.



## Core GenEd Course

Co-designed with AUK Library for First-Year students.

First cohort in Fall 2024.



## AI Literacy

Navigate AI search tools while understanding their limitations and ethical considerations.



## Research Strategies

Develop effective search techniques using keywords and natural language queries.



## Source Evaluation

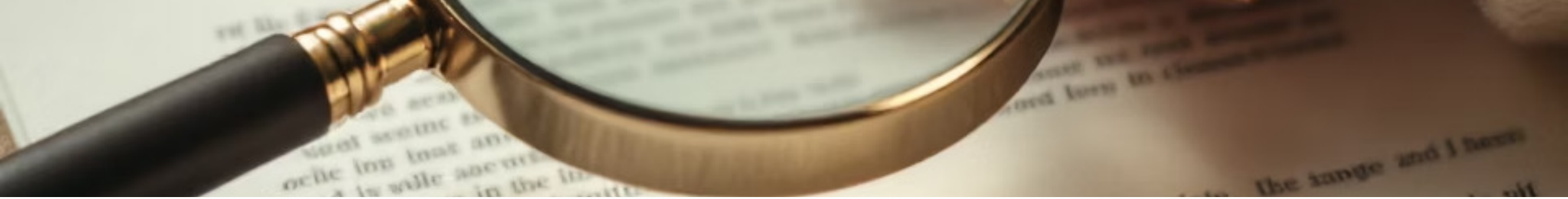
Critically assess information credibility, relevance, bias, and authority.



## Long-term Goal: Academic Integration

Apply information literacy across disciplines throughout academic career.





## Course Learning Outcomes

- ① — Identify the difference between scholarly and non-scholarly sources.
- ② — **Determine which search tools and types of sources are relevant depending on the type and scope of research to be conducted.**
- ③ — **Locate and use different search tools available through the open web and the AUK Library Catalog to retrieve specific types of sources.**
- ④ — **Assess the credibility, relevance, and bias of sources that are retrieved through searches.**
- ⑤ — Identify elements of a citation and write reference lists according to the appropriate citation style
- ⑥ — Identify how to respect intellectual property rights and adhere to guidelines for fair use.

Faculty-Librarian Collaboration: The Instructor addresses all the learning outcomes, and the librarian provides additional in-class instruction for CLOs 2 and 3.



# The Research Challenge



## Limited Regional Sources

Students struggle to find comprehensive library resources for GCC research topics.



## Geographic Imbalance

Kuwait and GCC research (Global South) is less represented compared to Europe and North America.



## Resource Gap

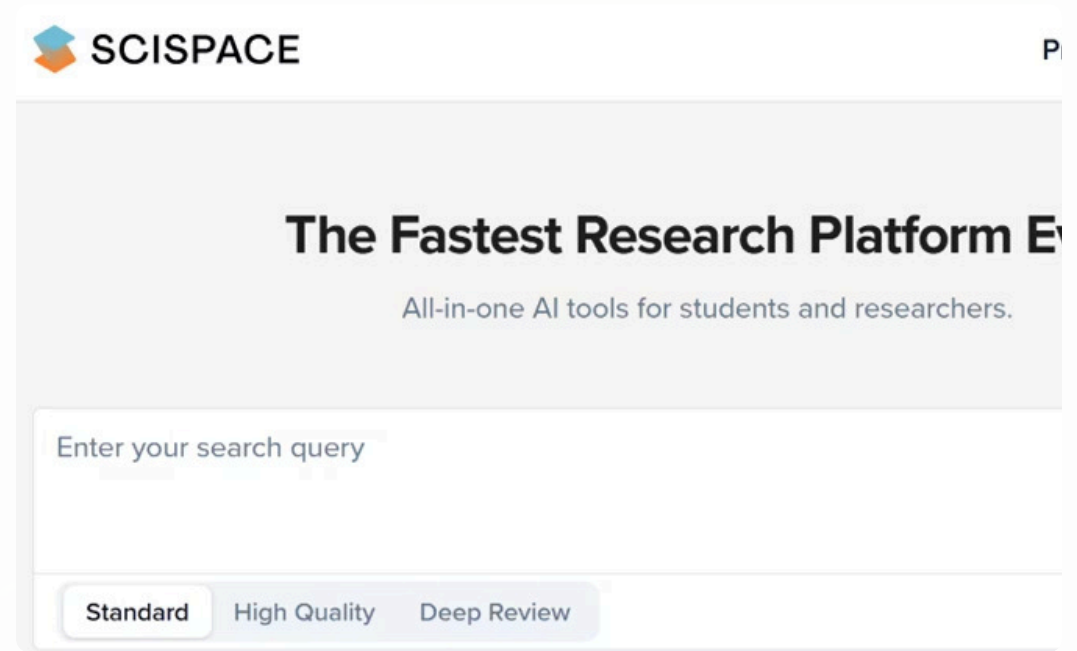
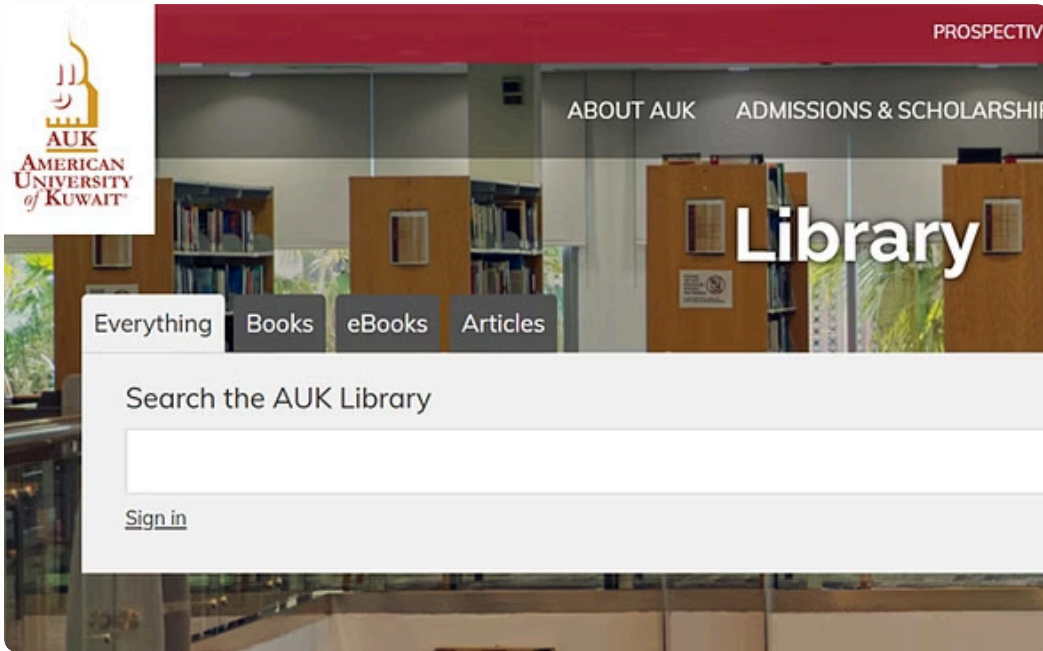
Traditional library catalogs alone cannot meet all student research needs.



# Vision: Pedagogy First, Technology Second

Educational needs drive technology choices, not the reverse.

- 1 Educational Needs Drive Technology**  
We identify research challenges first, then select appropriate AI solutions. This creates sustainable implementation.
- 2 AI as Amplifier, Not Replacement**  
Technology makes evidence-based research practices more accessible and efficient. Faculty maintain pedagogical control.
- 3 Maintaining Academic Integrity**  
We emphasize ethical considerations from day one. Students implement critical reasoning to evaluate credibility of sources and limitations of AI tools.
- 4 Utilize Scholarship of Teaching and Learning**  
By using evidence-based methodologies for teaching, we create an environment of developing skills through practice in the classroom and gaining authentic buy-in.



## Lexical/Keyword Searching

Library Catalog + Open Web searches



## Predatory Journal Evaluation

Identify warning signs of potentially predatory journals



## Prompt Generation Using Natural Language Prompts for searching with AI tools



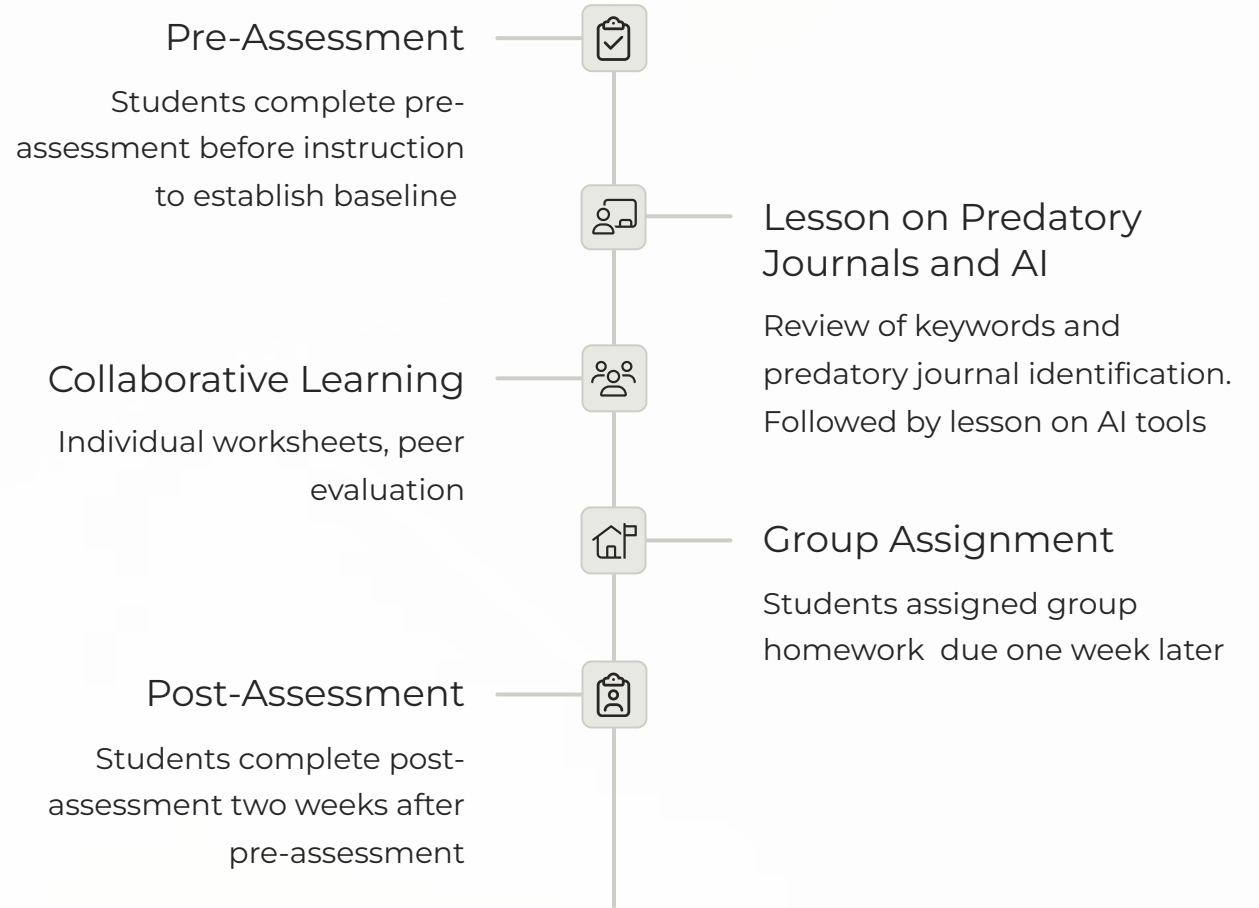
## Strengths and Limitations

Identifying AI strengths and limitations for academic searches





# Comparative Exercises Structure



# Pre/Post Assessment Sample

## 4. Understanding Search Results: Perplexity (5 points)

**Situation:** You searched Perplexity for "women-owned small-medium enterprises (SMEs) Kuwait peer-reviewed".



*Screenshot from Perplexity*

**Question:** Which details show the result may NOT be about Kuwait?

*Mark all correct answers - more than one may be right.*

- ☐ A. The title says "Indonesia"
- ☐ B. The result summary mentions "Indonesia"
- ☐ C. The link is from semanticscholar.org
- ☐ D. The result number is "1"
- ☐ E. The search box shows the words "peer-reviewed"



# Lesson on AI: Tools and Prompting

**Framework:** task + topic + location

- Example based on the Kuwait invasion
  - **Task:** Find peer-reviewed articles
  - **Topic:** Environmental impact of the invasion
  - **Location:** Kuwait

**Combined**, your search prompt would be: "Please find peer-reviewed journal articles about the environmental impact of the Kuwait invasion"

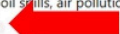
AI Tool Limitations

- Broken links in results
- Potential misinformation ("hallucinations")
- Wrong source types
  - Chapters instead of peer-reviewed articles
  - Wikipedia!
- Other topics such as algorithmic bias, missing metadata, and sycophantic nature of AI discussed, but not directly assessed by students

## Wikipedia!

- More concerning is that one of the sources is from **Wikipedia!**
  - Due to **statistical randomness**, this doesn't happen every time I enter this prompt in ChatGPT, but it happened two semesters in a row

### 5. Environmental Impact of the Gulf War: An Integrated Preliminary Assessment

- Author: Hosny Khordagui
- Published in: *Environmental Management*, 1993
- Summary: This preliminary assessment provides an overview of the environmental damage caused by the Gulf War, including oil spills, air pollution from burning oil wells, and the resulting ecological disturbances. 

These articles offer detailed analyses of the environmental consequences of the Gulf War on Kuwait's ecosystems. If you require further information or access to specific studies, please let me know.

 Sources

# Worksheet Samples

## Practice prompting and finding sources using AI tools

## Part 2: Using AI Tools to Retrieve Scholarly Journal Articles

Type in your research question using the AI tool indicated and find two relevant scholarly journal articles based on your research question

3. Use **SciSpace** (<https://scispace.com/>) to find two scholarly journal articles related to your research question.

a. Title of article 1:

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b. Title of article 2:

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c. Which country is in the title or abstract of each article?

Article 1:\_\_\_\_\_

Article 2:\_\_\_\_\_

d. Provide the name of the journal for each article.

Journal 1: \_\_\_\_\_

Journal 2: \_\_\_\_\_

## Paired critical evaluation of sources

Criterion	Partner A Column:	Partner B Column:
	AI Tool Name:	AI Tool Name:
Are both articles relevant to the topic? Explain.		
Are both articles scholarly sources? Explain.		
Is there a Gulf/Kuwait focus in both the articles?		
Do both journals appear to be reputable? Explain		
<p>JOINT REFLECTION (both <u>sign</u>)</p> <p>One strength of the AI <u>tools</u>: _____</p> <p>_____</p> <p>One limitation of the AI <u>tools</u>: _____</p> <p>_____</p>		

# Homework Assignment

## Reinforce practice of using AI tools

### Part 2: Searching Using AI Search Programs:

Type in your research question using the AI tool indicated and find one relevant scholarly journal article based on your research question. Then type in your research question using a **different** AI tool indicated and find a **different** scholarly journal article (**please do not include the same article multiple times even if you found them using different tools**).

3. Scholarly Journal Article from **SciSpace** (<https://scispace.com/>): (3 points):
  - a. Title of scholarly journal article (1 point):
  - b. Provide a link to the article (1 point):
  - c. Provide a screenshot of the search results (take a picture of the results screen on the AI tool before you click on the article) (1 point):
4. **Different** scholarly Journal Article from **Perplexity** (<https://www.perplexity.ai/>): (3 points):
  - a. Title of scholarly journal article (1 point):
  - b. Provide a link to the article (1 point):
  - c. Provide a screenshot of the search results (take a picture of the results screen on the AI tool before you click on the article) (1 point):

## Reflective practice on using AI tools and AUK library catalog

### Part 3: Comparing AI Search Programs to Library Databases:

Write down keywords for the original research question you had.

Example: Keywords: Climate Change, Polar Bears, Arctic, Population

7. Keywords (1 point):

Type your keywords in “**Search All**” (<https://www.auk.edu.kw/academics/Library>) and look at the search results.

8. Reflect on using AI Tools and the AUK Library (5 points):
  - a. Provide a screenshot of the search results (take a picture of the results screen showing the first 5-10 results) (1 point):
  - b. Have a look at the first 5-10 search results on Search All and describe how the sources are similar/different than the AI search tools (2 points):
  - c. Overall, which did you find better for academic searching, AI Tools or the AUK library? Why? (2 points)



# Lessons Learned & Future Plans



## Assessment Timing

- 15-minute pre-assessment needs adjustment.
- May split topics across multiple sessions so covering less material during main session on AI tools.



## Format Familiarity

- Students were not familiar with new worksheet format which required additional explanation time.



## Next Cohort Changes

- Implement three assessments throughout semester.
- Include instruction on AI deep search capabilities.



Thank you!

## **Access Course Materials**

Scan the QR code to access our downloadable toolkit with worksheets, assessment templates, and AI prompting guides. Thank you for your attention.

### **Artificial Intelligence Disclosure**

This presentation was developed with assistance from several artificial intelligence tools. OpenAI GPT-o3 (May 2025) was used to help conceptualize the outline of the presentation and synthesize themes from the course materials. Gamma.app AI-powered presentation software with text-to-image Flux was utilized to design the slide deck template, generate images and visualizations and all styling elements.