University Libraries' Curriculum Map

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Introduction

This document was created as a guide to show how to use the Learning Outcomes from the Student Learning Assessment Plan in different levels and types of classes. The list below is not exhaustive of every scenario in which we teach but can be used to guide library instructors in developing precise learning outcomes for their instruction that relate to our overarching Learning outcomes. The FY 21-23 Learning Outcomes are as follows:

1. Articulate their information need.
2. Locate resources using appropriate search tools and strategies for their information need.
3. Critically evaluate information and where it comes from.
4. Synthesize information from multiple sources.

5. Describe the information creation and dissemination process.
6. Identify the legal, economic, and social context of the use and creation of information.

This document utilizes four levels of knowledge at which to teach our Learning Outcomes: Introduced, Reinforced, Emphasized, and Mastered.

- Introduced- This is the first time a student will be hearing about this concept at the college level.
- Reinforced – A student is expected to have heard about this concept before coming to this course, but a student at this level is still focused on understanding/comprehending the concept being taught. Students begin application of this concept in this course.
- Emphasized – A student is expected to have tested this concept out before, but is learning more complex issues about the concept in this course.
- Mastered- A student has a grasp of the complex issues surrounding this topic and pushes beyond these issues to trying to solve them.

The learning outcomes are mapped to instruction levels the university libraries teach to show what level of information literacy knowledge should be expected of students and taught by instructors. The curriculum map below paints in broad strokes level each of these concepts *may* be taught at based on the course type. However, for individual sections and instructors it might be appropriate to go up or down a level, depending on the student's prior information literacy knowledge and the curriculum taught in the discipline. So a PhD level course may need to be reintroduced to a concept after significant time away from school and the subject librarian would level their learning outcomes appropriately.

It should also be noted, that teaching all of these outcomes in one course would be too much, the map below shows possibilities of instruction but each classroom experience should be designed in its own context. For example, you may want to both introduce and reinforce a concept in one class.

After the Curriculum Map the document includes all the Student Learning Assessment Outcomes and their Suboutcomes levelled. Each suboutcome includes examples of what knowledge a student may have at each curriculum level: Introduced, Reinforced, Emphasized, and Mastered.

Curriculum Map

George Mason University Libraries' Curriculum Map I = Introduced R = Reinforced E= Emphasized M= Mastered	UNIV 100	ENGH 101	ENGH 302	Major-Specific Introductory Course (100 or 200 level)	Major-Specific Research Methods Course (200 or 300 level)	Major-Specific Capstone Course (400 level)	Master's -Level Course	PhD Level Course
Students will be able to articulate their information need.	I	I*	R*	I*	R*	E*	M*	M*
Students will be able to locate resources using appropriate search tools and strategies for their information need.	I	I*	R*	I*	R*	E*	M*	M*
Students will be able to critically evaluate information and where it comes from.	-	I*	R*	I*	R*	E*	M*	M*
Students will be able to synthesize information from multiple sources.	-	I*	R*	I*	R*	E*	M*	M*
Students will be able to describe the information creation and dissemination process.	-	I*	R*	I*	R*	E*	M*	M*
Students will be able to identify the legal, economic, and social context of the use and creation of information.	I	I*	R*	I*	R*	E*	M*	M*

* Reminder: These are not expected to be taught in every class, each class should be customized for the needs of the students.

Bloom's Taxonomy for Levels

You can learn more about Bloom's Taxonomy on this website. Bloom's Taxonomy puts verbs into six different categories in order to help with the process of writing learning outcomes. Bloom's taxonomy gives instructors an organized set of objectives to help "plan and deliver appropriate instruction"(Anderson & Krathwohl, 2001). The chart below takes both the scale and the verbs used in Bloom's Taxonomy and applies them to our levels of instruction in the Curriculum Map.

Criteria	Introduced	Reinforced	Emphasized	Mastered
Bloom's Scale	Knowledge Comprehension	Comprehension Application	Analysis Synthesis	Evaluation
Verbs	Draw, Identify, Locate, Label, Select, Outline, Write, List, Recite, Name, State, Record, Repeat	Confirm, Convert, Explain, Relate, Describe, Paraphrase, Infer, Discuss, Estimate, Predict, Match, Evaluate	Analyze, Sort, Categorize, Investigate, Compare, Debate, Differentiate, Examine	Solve, Critique, Criticize, Appraise, Assess, Conclude, Justify, Judge
	Confirm, Convert, Explain, Relate, Describe, Paraphrase, Infer, Discuss, Estimate, Predict, Match, Evaluate	Apply, Modify, Build, Construct, Solve, Report, Sketch, Produce	Combine, Compose, Design, Generate, invent, Plan, Formulate, Originate, Devise, Revise, Hypothesize, Invent, Originate	

Levelled Outcomes

These are intended to aid instructors with leveling their instruction to the appropriate curriculum level for their course by providing examples of how each of the given suboutcomes may look at the four levels. Please remember that subject librarians are encouraged to create their own suboutcomes that reflect Library instructors not restricted to just using these suboutcomes, but can use the Levelled Outcomes as a guide of what instruction looks like at the different levels.

Outcome 1: Students will be able to articulate their information need.

Criteria	Introduced	Reinforced	Emphasized	Mastered
Students identify a research question to begin their search process.	Students describe the qualities of a research question.	Students apply the qualities of a research question to their unique project.	Students revise their own research questions based on their research findings	Students critique their research questions for adherence to disciplinary best practices.
Students articulate how information within their discipline is organized and structured.	Students outline the way information in their field is produced.	Students explain how information within their discipline is organized and structured.	Students analyze why the information in their discipline is organized and structured the way that it is.	Students generate original work following their discipline's organization and structure.
Students analyze a topic or research question to determine whether a single answer or multiple, conflicting answers exist.	Students identify when/where more information is needed to answer a particular question.	Students analyze a topic or research question to determine whether a single answer or multiple, conflicting answers exist.	Students assess whether there are any key information points or voices that are missing in the way their discipline routinely uses sources.	Students generate their own conclusions based on a research question and its multiple or conflicting answers.

Outcome 2: Students will be able to locate resources using appropriate search tools and strategies for their information need.

Criteria	Introduced	Reinforced	Emphasized	Mastered
Students refine search strategies and search language (keywords, controlled vocabulary, natural language) based on search results.	Students apply search strategies in order to find relevant sources to their topic.	Students describe how using effective search strategies changes their search results.	Students compare different search strategies to see which ones return the most relevant results.	Students can articulate how their search strategies fit into a larger research plan .
Students expand their information searches through cited reference searching techniques.	Students recognize that sources in a bibliography can be utilized as sources.	Students apply citation mining techniques to find relevant sources.	Students examine how a scholarly conversation moves through connected citations.	Students use citation mining to get a complete picture of the scholarship surrounding their topic.
Students reformulate research questions based on information gaps and possibly conflicting information.	Students identify when research questions may need to be changed based on new information.	Students discuss how information gaps and conflicting information may change a research question.	Students revise research questions based on information gaps and conflicting information.	Students create a research question that fills a gap in the literature.
Students match information needs and search strategies to appropriate search tools.	Students identify search tools that match their information needs and search strategies.	Students explain how the search tools are appropriate for their information needs and search strategies.	Students investigate a variety of search tools to determine what qualities make them appropriate for specific information needs and search strategies.	Students evaluate existing search tools to determine gaps in the kinds of features available for a particular information need or search strategy.

Outcome 3: Students will be able to critically evaluate information and where it comes from.

Sub-Outcome	Introduced	Reinforced	Emphasized	Mastered
Students describe various research methods utilized in their discipline.	Students define research methods used by researchers to answer questions.	Students describe various research methods utilized in their discipline.	Students compare the research methods used in their discipline to those used in other disciplines.	Students select an appropriate research method for their research question.
Students define different types of authority, such as subject expertise (e.g., scholarship), societal position (e.g., public office or title), or special experience (e.g., participating in a historic event.	Students identify at least one type of authority for sources.	Students describe and explain alternative types of authority.	Students compare the uses and merits of each type of authority in different circumstances and contexts.	Students assess their disciplines' specific way(s) of thinking about types of authority.
Students recognize that information may be perceived differently based on the format in which it is packaged.	Students describe the different types of information source formats.	Students identify their own perceptions about the use of different types of information source formats (e.g. online or physical, etc.)	Students compare their own perceptions of two different source formats and the information they include.	Students assess the relationship between our perceptions of information and the format in which it is packaged.

Outcome 4: Students will be able to synthesize information from multiple sources.

Criteria	Introduced	Reinforced	Emphasized	Mastered
Students compare how the scholarly perspective changed over time on a particular topic within a discipline.	Students describe what a scholarly conversation is.	Students describe how the scholarly conversation on a particular topic has changed over time.	Students compare two different scholarly conversations on a similar topic.	Students synthesize multiple scholarly conversations in the context of their own research.
Students draw reasonable conclusions based on the analysis and interpretation of information.	Students outline the process of using existing information to form a conclusion.	Students develop an interpretation of information based on several different sources.	Students describe how they came to synthesize a conclusion from several different sources.	Students critique how scholars used information to draw conclusions in their research.

Outcome 5: Students will be able to describe the information creation and dissemination process.

Criteria	Introduced	Reinforced	Emphasized	Mastered
Students articulate the capabilities and constraints of information developed through various creation processes.	Students describe the different processes through which information is created.	Students describe how different types of sources provide different kinds of information.	Students articulate the capabilities and constraints of information developed through various creation processes.	Students choose sources to answer a question based on these sources' capabilities and constraints.
Students recognize that a given scholarly work may not represent the only or even the majority perspective on the issue.	Students articulate how the peer-review process may exclude types of information or research.	Students identify which voices/parties are vital to their topic to be included and/or represented and how that will form their research.	Students design a plan to include all vital voices/parties in their research.	Students assess the use (or lack thereof) of vital voices/parties in their own research.

Outcome 6: Students will be able to identify the legal, economic, and social context of the use and creation of information.

Criteria	Introduced	Reinforced	Emphasized	Mastered
Students describe the commodification of information and how it affects access to various types of information.	Students identify information that is available on the open web vs behind a paywall.	Students describe the commodification of information.	Students compare how information commodification affects access to various types of information.	Students critique how the commodification of information affects the types of sources that they use.
Students understand how and why some individuals or groups of individuals may be underrepresented or systematically marginalized within the systems that produce and disseminate information.	Students identify the groups and individuals that are marginalized within academic publishing.	Students discuss the policies that lead to some voices becoming marginalized in academic publishing.	Students investigate the ways their discipline excludes the voices of some groups or individuals.	Students propose (or compose) a policy or set of policies to make publishing in their discipline more inclusive.
Students recognize issues of access or lack of access to information sources.	Students identify issues related to information access in a research setting.	Students evaluate issues surrounding access to information sources.	Students compare their information access to the information available outside of an academic institution.	Students assess issues of information access within their discipline.
Students articulate the purpose and distinguishing characteristics of copyright, fair use, open access, and the public domain.	Students outline what copyright, fair use, open access, and public domain are.	Students describe the purpose of copyright, fair use, open access, and the public domain.	Students analyze the way that copyright law is used by publishing companies and authors, and how this differs from fair use, open access, and public domain practices.	Students assess the type of publishing model that works best for their specific work domestically and internationally.

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