

# **Universal Design for Learning and the Quality Matters Guidelines for the Design and Implementation of Online Learning Events**

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This article integrates two frameworks, Quality Matters (QM) and tenants of Universal Design for Learning (UDL), in the development and implementation of online learning courses. Both of these frameworks are described. This report highlights guidelines and presents an example for creating quality online courses with a combined emphasis on course content and course delivery system. These guidelines underscore the need for advance planning of content and delivery methods. Quality Matters (QM) provides a standards-based, collaborative peer review process to assure the quality of online courses (Varonis, 2014). Universal Design for Learning is a set of principles for curriculum development that give all individuals equal opportunities to learn. The goal of this practical summary is to provide guidance about elements that are recommended to faculty as they plan for highly effective, goal oriented and interactive online instruction and student learning.

Keywords: Universal Design for Learning, Quality Matters, Online Hybrid, and Online Course Design

## **INTRODUCTION**

This practical report starts with the integration of two frameworks, Quality Matters (QM) and tenants of Universal Design for Learning (UDL), to be used in the development and implementation of online learning courses. Presented first are guidelines for creating quality online courses with a combined emphasis on course content and the course delivery system. This article underscores the need for faculty to complete advance planning of content and delivery methods as well as recommendations to enhance faculty interactions with and among students.

In 2002, less than half of higher education institutions identified online education as critical to their long-term strategy; a decade later, 69.1% of institutions recognized this critical component of long term strategy (Elaine & Seaman, 2013). This growth in online learning in the first decade of the 21<sup>st</sup> century was accompanied by pedagogical

advancements related to brain research, and a continuing evolution of standard-based learning. As our home institution, Towson University, began the migration to offering more blended courses and fully online courses, we were asked to participate in the development of institutional online learning guidelines. This research and related experiences led us to integrating two frameworks in the development of institutional online learning guidelines.

Quality Matters (QM) and tenants of Universal Design for Learning (UDL) provided premier sources of materials to support the writing of this document (CAST, 2011b). Quality Matters (QM) provide a standards-based, collaborative peer review process to assure the quality of online courses (Varonis, 2014). UDL is a set of principles for curriculum development that give all individuals equal opportunities to learn. UDL provides a blueprint for creating instructional goals, methods, materials, and assessments that work for everyone--not a single, one-size-fits-all solution, but rather flexible approaches that can be customized and adjusted for individual needs (CAST, 2012).

The intent and purpose of this practical summary is to provide guidance about elements that are recommended to faculty as they plan for highly effective, goal oriented and interactive online instruction and student learning. This article starts with a literature review related to UDL and the QM guidelines. An understanding of context and impact of UDL and QM on the design and delivery of instruction provides the framework for this research summary. In organizing the themes regarding quality of online courses, the two major sub-topics include course content and course technology and delivery systems. Within the realm of course content, four sub-topics are noted in this document (a) context and background; (b) learning objectives; (c) assessments including assignments and expectations; and (d) instructional materials and resources. This summary continues with discussion of learner support and interaction, which includes discussion of learner interaction; learning support and accessibility; and faculty and student interaction. Finally, a detailed example of UDL and QM implementation in an online course is included.

## LITERATURE REVIEW

### *UNIVERSAL DESIGN FOR LEARNING*

Universal Design for Learning can be traced to the 1950s with the consideration of designing buildings to be accessible for individuals with disabilities. This concept evolved through the 1960's and 1970's to the concept of integrating all people in all architectural and environmental designs (Roberts, Park, Brown & Cook, 2011). Concurrently, legislation supporting the rights of individuals with disabilities was enacted including: the Architectural Barriers Act of 1968, the Rehabilitation Act of 1973, Education for All Handicapped Children Act of 1975 and the Individuals with Disabilities Education Improvement Act (2004).

As defined in the Higher Educational opportunity Act of 2008, the term Universal Design for Learning means a scientifically valid framework for guiding educational practice that

- provides flexibility in the ways information is presented, in the ways students respond or demonstrate knowledge and skills, and in the ways students are engaged; and
- reduces barriers in instruction, provides appropriate accommodations, supports, and challenges, and maintains high achievement expectations for all students, including students with disabilities and students who are limited English proficient (20 U.S.C. § 1003(24)).

The National Center on Universal Design for Learning (2013) defines UDL as providing a blueprint for creating instructional goals, methods, materials, and assessments that work for everyone not a single one size fits all solution, but rather flexible approaches that can be customized and adjusted for individual needs. King-Sears (2014) noted that the UDL framework supports the needs of all learners, including those with disabilities who are from culturally and linguistically diverse backgrounds.

#### *UNIVERSAL DESIGN FOR LEARNING AND NEUROSCIENCE*

The Center for Applied Special Technology (CAST) is a premier organization in the study of neuroscience and learning. The foundation of UDL is based on the recognition that individual learning has a variety of skills, needs and interests. The neuroscience behind UDL is based on three primary brain networks (CAST, 2012). UDL provides guiding principles for each of these networks.

The *Recognition Networks* address the "what" of learning; "how we gather facts and categorize what we see, hear, and read. Identifying letters, words, or an author's style are recognition tasks" (CAST, 2012). The *Recognition Networks* includes the portion of a course in which faculty present knowledge, directions, resources, and key course information. The *Recognition Networks* are supported by the guiding principles of *Representation* (related to the "what" of learning). Students differ naturally in the ways that they process information (i.e., access, comprehension, retention). High-quality learning environments include multiple representations of concepts that are flexible both in terms of their modality and examples (e.g., graphical vs. algebraic representation of gravity) (CAST, 2011).

The *Strategic Networks* address the "how" of learning. Planning and performance tasks, the organization of ideas such writing an essay or solving a math problem are examples of the "how" of learning (CAST, 2012). The *Strategic Networks* are supported by the guiding principles of *Action and Expression*. The ways in which students demonstrate knowledge can be best supported in learning environments that include multiple ways for acting and expressing upon material, for developing meta-skills, and for demonstrating knowledge and understanding (CAST, 2011).

The *Affective Networks* address the "why" of learning, and are supported by the guiding principles of motivation; how students are challenged provide examples of the "why" of learning (CAST, 2012). In the *Affective Networks*, students are often afforded options for how they learn course information. Natural differences affect the ways student engage content challenges. Providing student with options, choices and multiple modes of capturing interest and providing meaning interactions with content (CAST, 2011).

#### *QUALITY MATTERS*

The Quality Matters Program (QM) is an international organization representing broad inter-institutional collaboration and a shared understanding of online course quality (Quality Matters Program, 2015a). The Quality Matters (QM) process is a faculty-centered, peer review process that is designed to certify the quality of online and blended courses. QM is a leader in quality assurance for online education and has received national recognition for its scalable, peer-based approach and continuous improvement in online education and student learning (Quality Matters Program 2015a). Quality Matters (QM) has been considered to be the national standard for the design, implementation and improvement of online and hybrid courses (Guidelines, 2009). QM is used for the certification of the design of online and blended courses; more than 23,000 faculty and instructional design staff have been trained on the QM process (Quality Matters Program, 2015a).

Quality Matters is supported by research and best practices (Quality Matters Program, 2015a). The Quality Matters Program and Quality Matters rubric undergoes a continuous improvement process to retain the QM Rubric TM and processes are current, practical, and applicable across academic disciplines and academic levels (Shattuck, Zimmerman, & Adair, 2014, p. 32). Shattuck et al., 2014 recently reviewed the guiding principles of QM based on Boyer's scholarship of application and scholarship of integration. Veronis (2014) noted QM improved online learning outcomes, in an economical manner via best practices in course design, validation and by having faculty focus on course design.

The Quality Matters process offers numerous benefits including:

- Improved student engagement and learning outcomes
- Adoption of a systematic and comprehensive continuous quality assurance process that includes faculty training, course development, and course improvement processes that are aligned with accreditation standards
- Incorporation of new technologies and research findings
- Opportunity to engage in benchmarking activities with peer institutions
- Ongoing faculty professional development
- Opportunity for peer-to-peer collaboration and sharing across institutions
- Online courses that meet a consistent and widely-respected quality threshold (Quality Matters Program, 2015a).

### *QUALITY MATTERS RUBRIC*

The Quality Matters rubric is to be used with courses that are fully online or hybrid and blended courses with significant online components (Quality Matters Program, 2015b). The Quality Matters Rubric can be downloaded via <https://www.qualitymatters.org/rubric> with the creation of an account.

The Quality Matters rubric (Quality Matters Program, 2015b) contains the following eight standards:

- Course Overview and Introduction
- Learning Objectives (Competencies)\*
- Assessment and Measurement\*
- Instructional Materials \*
- Course Activities and Learner Interaction\*
- Course Technology \*
- Learner Support
- Accessibility and Usability

Five of these standards are considered critical course components denoted by an \* above. These components are intended to work together to make certain that students achieve the desired learning outcomes. Proper alignment ensures that course components are directly related to and supporting the learning objectives. Specific Review Standards included in alignment are indicated in the Rubric Annotations.

## **COURSE CONTENT**

### *CONTEXT AND BACKGROUND*

Within the realm of course content, we propose that context and background are developed as ways to provide students with a solid grounding in the field of study as well as a sense of prior background knowledge that is required in the course (QM 1, UDL 3.1). By providing background information and a helpful starting point, faculty insure that students know early expectations, background knowledge, purpose and how they will start to learn in this course (QM 1.2). Examples for getting started include a tour of the course

content and components, an overview of the course syllabus, required resources, and an index (which may be topical or graphically organized) that helps to provide a structure and road map for the course, which may include calendar or schedule of key events (QM 1.1, 1.7). Common course content and communications expectations should be addressed including online course etiquette and policies (QM 1.3, 1.4). Course policy discussion may include added details about attendance, key assignments, due dates, group work and examinations.

### *LEARNING OBJECTIVES*

Essential elements of course content include clearly stated and measureable learning objectives that are oriented to student learning at appropriate skill and experience levels (QM 2.1, 2.3, 2.5). For example, objectives that are performable by students and indicate understanding of course concepts, skills, and knowledge (QM 2.2). Instructions that are presented in a wide array of formats that provide students with sample outcomes and detailed assignment expectations are important to insure that objectives are met (UDL 1, 2.5).

### *ASSESSMENTS INCLUDING ASSIGNMENTS AND EXPECTATIONS*

Course assessments and outcome measures that demonstrate student knowledge and growth from the academic experience should be integrated to learning objectives. The types of assessments used would measure the stated learning objectives and are consistent with course activities and resources (QM 3.1). These course assessments are tied to course grading policies, which are fully enumerated (QM 3.3). Thorough descriptions of assignment expectations provide students with detailed information regarding significant course assignments such as tests, paper, presentations and all aspects of graded student performance requirements (QM 3.4). Students should be provided with multiple opportunities to demonstrate learning on varied types of assessment measures (QM 3.5, UDL 4.1, 5.2).

### *INSTRUCTIONAL MATERIALS AND RESOURCES*

At the heart of course design, faculty should consider the Universal Design for Learning framework that guides faculty to present instructional material in a wide array of media (including written, audio, video, and graphic, to name a few) while allowing students equally diverse way of representing their own learning and knowledge from the course experience (UDL 1, 2.5). These instructional materials should be current, engaging, useful, varied, clear and cited (QM 4.3, 4.4). The purposeful use of instructional materials that are fully integrated to student learning events and requirements is necessary to insure that students are able to learn course content (QM 4.2). It is also recommended that instructional materials present a variety of perspectives on the course content (QM 4.5).

## **COURSE TECHNOLOGY AND DELIVERY SYSTEMS**

The online course delivery recommendations and considerations in this report are based on principle of accessibility for all learners. The effective delivery of online instruction is predicated on following topics (a) course navigation and technology including the delivery system, and related technology elements, and (b) learner support and interaction.

Online instruction is to be delivered within the context of an online Learning Management System (e.g. Blackboard). Course documentation should include a detailed course syllabus and instructions for accessing all aspects of the course. Specifically, course instructions should: provide a clear description of how students access and receive

technical support (QM 7.1); articulate or link to the institution's accessibility policies and services (QM 7.2); and articulate or link to an explanation of how the institution's academic support services (QM 7.3) including student disability support services (QM 7.4). Course delivery should be presented in online modules (standardized units). A video introduction and course module introductions of the course are to be digitally recorded via a digital media classroom or screen capture software.

#### *COURSE NAVIGATION AND TECHNOLOGY*

The overall online course layout is to be designed to support student engagement and provide access to all course components. All course tools and media are to be aligned with the course learning objectives (QM 6.1), while navigation via the online tools and media is logical, consistent and efficient (QM 6.3). There is a need for course technologies which are readily accessible (QM 6.4), and current (QM 6.5).

Course tools that promote active student learning by optimizing individual choice (QM 5.2, UDL 7.1) and autonomy are recommended. Course design and implementation should minimize threats and distractions to learning (UDL 7.3).

### **LEARNER SUPPORT AND INTERACTION**

#### *LEARNER INTERACTION*

The requirements for student participation and interaction must be clearly stated (QM5.4). We suggest faculty create and communicate a plan to students about the type of interactions such as course discussions and the related student performance expectations. The instructor's plan for classroom response time and feedback on assignments is also clearly stated (QM5.3). The course design and instructional components should incorporate learner interaction that is motivational and promotes learning. We encourage faculty to find ways to provide feedback, and regular checkpoints, so that students are supported in their online work. Learning activities should advance the achievement and heighten the salience of the course learning objectives (QM5.1, UDL 8.1). Active learning can occur with the course by optimizing relevance, value and authenticity (UDL 7.2) of the learning activities, fostering collaboration (UDL 8.3) and communication, and increasing mastery-oriented feedback (UDL 8.4). This topic of learner interaction leads to the next topic ways to enhance and support students including improved accessibility.

#### *LEARNING SUPPORT AND ACCESSIBILITY*

In regards to learner accessibility, the course design, navigation and implementation must exemplify accessibility for all learners (QM8). Accessible technologies are to be utilized and guidance for providing accommodations (QM 8.1).

In the effort to provide instruction for all learning modalities, alternatives are to be provided for the perception of auditory and visual content (QM 8.2, UDL 1.2, 1.3). The presentation of information should be customized to best meet the learning needs of diverse course populations (UDL 1.1).

The course design must focus on minimizing distractions and facilitating readability by utilizing multiple media (UDL 2.5). Considerations are to be provided with clarification of vocabulary, symbols, notation and syntax unique to respective course content (UDL 2.1-2.3). The course should accommodate and optimize the use of assistive tools and technologies (QM 8.4, UDL 4.2). Course design should vary the methods of responses and navigation as a mode for providing options for physical participation (UDL 4.1).

Recent research by Vue et al. (2016) indicates that UDL provides a useful framework for assisting students with self-expression, communications with peers and writing tasks.

This research was conducted in a web-based learning environment that focused on the writing process of middle school students. This serves as one of the many emerging examples of how UDL concepts and structured support can foster student learning using technology, and in this case, the writing process.

#### *FACULTY AND STUDENT INTERACTION: ADDED ELEMENT*

While UDL principles have three major elements (*Recognition*, *Strategic* and *Affective* networks), these networks do not fully include the interaction between faculty and students. There are elements of the QM guidelines that reference learner interaction. A greater spotlight on interaction between faculty and students is needed to fill in the gaps between *Recognition* networks, which often include faculty presentations and lectures, and *Strategic* networks which are the products and work that students create in courses. The interaction between faculty and students can be defined as dynamic and on-going communications that occur within a course that help to fully articulate the key learning objectives of the course. These communications can include added explanations of course content material, faculty feedback, and discussion of expectations of the products that students create in the course.

The literature on interaction between faculty and students indicates these communications are predictors of student learning and success within courses (Rugutt, & Chemosit, 2009; Woodside, Wong, & Wiest, 1999). For example, analyses indicate that in-class verbal immediacy behaviors do contribute to students' achievement (Woodside, Wong, & Wiest, 1999). When looking at a range of variables, Woodside Wong and Wiest (1999) noted the predictive power of student-faculty interaction was very strong. These studies highlight the importance of faculty and student interactions and communications that are correlated with student learning, success and academic growth (Rugutt, & Chemosit, 2009; Woodside, Wong, & Wiest, 1999). This research points to a need, in UDL terms, to creating a bridge between *Recognition*, and *Strategic* networks. This bridge is the course-based communications, interactions that occur between faculty and students. In this next section, an example is included that provides added details about how to consider designing an online course based on QM and UDL principles.

### **IMPLEMENTATION EXAMPLE**

An opportunity to utilize the QM rubric and principles of UDL in the design and implementation of a fully online course was presented via a grant from the Towson University Office of Academic Innovation. The grant provided for a faculty member in partnership with an instructional designer, serving as a peer reviewer, to convert a face-to-face course to a fully online course using the QM guidelines as a foundation. Additionally, the faculty member, having a keen interest in UDL, applied UDL principles to the course design.

The course selected was titled, *Foundations of Instructional Technology*. This core content for the course was based on UDL and the integration of instructional technology tools in the classroom, and workplace.

The process for the course conversion involved the following incremental steps:

- The course faculty member was provided with the QM rubric and templates to “work-up an outline” for the structure of the online course. The faculty member utilized the QM rubric and the guiding UDL Principles in this initial phase of course design.
- The course was developed and housed in the Blackboard Learning Management System.
- The course was divided into one-week online modules based on a logical division of the content from the face-to-face version of the course syllabus.

- A course calendar was developed.
- Relevant course objectives were aligned to each module.
- Tentative assessments were discussed and developed to align with the learning objectives.
- Modes of instruction were developed and produced in multiple formats/tools (print, graphic, audio and video representation).
- Objectives were refined.
- Instruction was refined.
- Alternative modes of instruction were produced.
- Learning interaction was reviewed to assure student participation is clearly explained and responses and feedback times were addressed. The course structure was reviewed to assure active learning.
- Alternative modes of assessment were produced.
- Final course review was conducted to assure learning support and accessibility

The development of the course was reviewed in two formative phases by the instructional designer. At these phases, the instructional designer utilized the QM rubric as a formative evaluative tool. In addition, the instructional designer examined the course redesign from the perspective of a potential student. Feedback was then provided from the instructional designer to the faculty member, and formative revisions were made based on the feedback. Summative feedback was provided once the course was fully designed and all elements were posted in Blackboard. This summative feedback can be characterized as positive as this course was well aligned with the QM rubric.

The success of the course implementation was evident in the students' evaluation of the course content and the instructor. In the first implementation of the course, the student evaluations rated the course with mean score of 5.00 on a 5.00 point (n=18) on a 1.00-5.00 Likert scale evaluation. The mean ratings for the second implementation of the course were 4.86/5.00 (n=17).

The implementation of the course involved a video guided tour and tutorial for the Blackboard learning management system. A course introduction video was recorded via screen capture software. This video provided visual and audio accompaniment of the course syllabus, sequence, module design, a review of course expectations and assignment criteria.

Each learning module contained printed directions, audio and video directions, and where applicable, video-based tutorials to provide multiple means of representation. Students were provided with a variety of assessments to complete (their choice) based on their backgrounds and needs. For example, one module focused on the design of an educational portfolio and the alignment of educational standards with assessments. Students could produce the portfolio in any web-based tool of their choosing (*PBworks*, *Weebly*, *WikiSpaces*, *Prezi* etc.) Tutorials were provided for each product to help the students get started in the process, but the construction of their individual portfolios was differential. The course assessments were scored via a standard rubric aligned with the module objectives and assignment criteria. Appendix A presents each phase of this design process and notes the QM standards and UDL principles applied in each step and implemented in the course.

Other factors contributed to the successful delivery online delivery of the course. The faculty member provided students with his cell phone number so that they could have immediate assistance or guidance with technical issues. The faculty member checked his e-mail several times daily throughout the duration of the course. Feedback to students was provided via scored rubrics, but with accompanying screen captured video of the students completed products with instructor feedback.



The Quality Matters and Universal Design for Learning Principles referenced in the design and implementation of the *Foundations of Instructional Technology* course are presented in the following checklist. The checklist, which is included in Appendix B, is to be utilized by course instructors to optimize the design and implementation of online courses.

## CONCLUSION

In summary, this report highlights guidelines for creating quality of online courses with a combined emphasis on course content and course delivery system. The recommendations and guidelines in this report are based on principle of accessibility for all learners and integrate the tenants of Universal Design for Learning and the Quality Matters Guidelines. These guidelines underscore the need for advance planning of content and delivery methods, reflection on the intended outcomes expected of students who complete each course and ways to enhance student participation online with course content. For faculty embarking in the process of online course design, CAST (2011a) provides recommendations for the process, based on suggestions from higher education faculty experienced in the implementation of UDL. These recommendations include: (a) starting with small steps; perhaps a specific lesson with tight learning goals; (b) involving students as partners in learning and let them help drive changes; (c) providing multiple ways to access the information; (d) providing multiple ways that students can demonstrate their understanding (e) providing multiple ways to engage with the curriculum.

Overall, this report highlights that the Quality Matters Guidelines and Universal Design for Learning Principles hold much promise for supporting faculty in teaching effective and interactive online courses. With careful design and planning, online courses can be engaging and inclusive of detailed and useful content discussions and interactions that enhance student learning.

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**APPENDEX**

*APPENDIX A*

Implementation of QM and Universal Design for Learning Principles within an online course	
Process implemented	QM and UDL Principles and Course Activities
The course faculty member was provided with the QM rubric and templates to workup an outline for the structure of the online course. The faculty member utilized the QM rubric and the guiding principles of UDL.	<ul style="list-style-type: none"> <li>• Course instructions articulate or link to the institution’s accessibility policies and services (QM 7.2).</li> <li>• Course instructions articulate or link to an explanation of how the institution’s academic support services (QM 7.3).</li> <li>• Course instructions include student disability support services (QM 7.4).</li> </ul>
The course was housed in the Blackboard Learning Management System.	<ul style="list-style-type: none"> <li>• Course and/or institutional policies are presented (QM 1.4).</li> </ul>
The course was divided into one-week online modules based on a logical division of the course syllabus.	<ul style="list-style-type: none"> <li>• Instructions provide a clear start and identify course components (QM 1.1).</li> <li>• Introduce the purpose and structure of the course (QM 1.2).</li> <li>• Course and/or institutional policies presented (QM 1.4).</li> <li>• Course grading policy is stated clearly (QM 3.2)</li> <li>• Planned video introduction and course modules (UDL 1, 2.5)</li> <li>• Introductions of the course are digitally recorded via the Digital Media Classroom or screen capture software (UDL 1, 2.5)</li> </ul>
A course calendar was developed.	<ul style="list-style-type: none"> <li>• Instructions provide a clear start and identify course components (QM 1.1).</li> <li>• Introduce the purpose and structure of the course (QM 1.2).</li> </ul>
Relevant course objectives were aligned to each module.	<ul style="list-style-type: none"> <li>• Course learning objectives are measurable (QM 2.1)</li> <li>• Learning objectives and related outcomes are consistent with course objectives (QM 2.2)</li> <li>• Learning objectives are stated clearly and written from the student’s perspective (QM 2.3)</li> </ul>
Tentative assessments were discussed and developed to align with the learning objectives.	<ul style="list-style-type: none"> <li>• Assessments measure learning objectives and are consistent with course activities (QM 3.1)</li> <li>• Assessments are sequenced, varied, and appropriate to the student work (QM 3.4)</li> <li>• Multiple opportunities are provided to measure student learning (QM 3.5)</li> </ul>
Modes of instruction were developed and produced in multiple formats/tools	<ul style="list-style-type: none"> <li>• Instructions are presented in a wide array of formats with samples outcomes (UDL 1, 2.5)</li> </ul>

(print, audio and video representation).	<ul style="list-style-type: none"> <li>• Clearly stated purpose for instructional materials that are related to learning activities (QM 4.2)</li> <li>• Course resources are appropriately cited and current (QM 4.3, 4.4)</li> <li>• Instructional materials present a variety of formats and perspectives on the course content (QM 4.5, UDL 1, 2.5, 3.3)</li> <li>• All course tools and media are aligned with the course learning objectives (QM 6.1).</li> <li>• Navigation via the online tools and media is logical, consistent and efficient (QM 6.3).</li> <li>• Course technologies are readily accessible and are current (QM 6.4, 6.5).</li> <li>• The course tools promote active student learning by optimizing individual choice (QM 5.2, UDL 7.1) and autonomy.</li> <li>• Course design and implementation should minimize threats and distractions to learning (UDL 7.3)</li> </ul>
Objectives were refined/realigned assessments and instruction was refined/realigned with the objectives	<ul style="list-style-type: none"> <li>• Assessments measure learning objectives and are consistent with course activities (QM 3.1)</li> <li>• All course tools and media are aligned with the course learning objectives (QM 6.1)</li> </ul>
Alternative modes of instruction were produced.	<ul style="list-style-type: none"> <li>• Instructional materials present a variety of formats and perspectives on the course content (QM 4.5, UDL 1, 2.5, 3.3)</li> </ul>
Learning interaction was reviewed to assure student participation is clearly explained and responses and feedback times are addressed. The course structure was reviewed to assure active learning.	<ul style="list-style-type: none"> <li>• The requirements for student participation and interaction is clearly stated (QM5.4)</li> <li>• Plan for classroom response time and feedback on assignments is clearly stated (QM5.3).</li> <li>• Learning activities advance the achievement and heighten the salience of the course learning objectives (QM5.1, UDL 8.1).</li> <li>• Active learning is promoted by optimizing relevance, value and authenticity (UDL 7.2) of the learning activities.</li> <li>• Active learning is promoted by fostering collaboration (UDL 8.3) between students and with faculty</li> <li>• Active learning is promoted by communication and increasing mastery-oriented feedback (UDL 8.4)</li> </ul>
Alternative modes of assessment were produced.	<ul style="list-style-type: none"> <li>• Assessments measure learning objectives and are consistent with course activities (QM 3.1)</li> </ul>
Final course review was conducted to assure learning support and accessibility.	<ul style="list-style-type: none"> <li>• Course design, navigation and implementation exemplify accessibility for all learners (QM8).</li> <li>• Accessible technologies are utilized and guidance is provided on obtaining accommodations (QM 8.1).</li> </ul>

	<ul style="list-style-type: none"> <li>• Alternatives are provided for the perception of auditory and visual content (QM 8.2, UDL 1.2, 1.3).</li> <li>• Presentation of information should be customized to best meet the learning needs of diverse course populations (UDL 1.1).</li> <li>• Course design is focused on minimizing distractions and facilitates readability by utilizing multiple media (UDL 2.5).</li> <li>• Consideration is given to the clarification of vocabulary, symbols, notation, graphics, and syntax unique to respective course content (UDL 2.1, 2.2, 2.3).</li> <li>• The course accommodates and optimizes the use of assistive tools and technologies (QM 8.4, UDL 4.2).</li> <li>• Course design varies the methods of responses and navigation as a mode for providing options for physical participation (UDL 4.1).</li> </ul>
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## APPENDIX B

### COURSE CONTENT AND DELIVERY METHODS: CHECKLIST

#### *Context and Background*

- Instructions provide a clear start and identify course components (QM 1.1).
- Introduce the purpose and structure of the course (QM 1.2).
- Course and/or institutional policies are presented (QM 1.4).

#### *Learning Objectives*

- Course learning objectives are measurable (QM 2.1)
- Learning objectives and related outcomes are consistent with course objectives (QM 2.2)
- Learning objectives are stated clearly and written from the student's perspective (QM 2.3)
- Instructions are presented in a wide array of formats with samples outcomes (UDL 1, 2.5)

#### *Assessments including Assignments and Expectations*

- Assessments measure learning objectives and are consistent with course activities (QM 3.1)
- Course grading policy is stated clearly (QM 3.2)
- Assessments are sequenced, varied, and appropriate to the student work (QM 3.4)
- Multiple opportunities are provided to measure student learning (QM 3.5)

#### *Instructional Materials and Resources*

- Clearly stated purpose for instructional materials that are related to learning activities (QM 4.2)
- Course resources are appropriately cited and current (QM 4.3, 4.4)

- Instructional materials present a variety of formats and perspectives on the course content (QM 4.5, UDL 1, 2.5, 3.3)

#### *Course Technology and Delivery Systems*

- Course instructions articulate or link to the institution's accessibility policies and services (QM 7.2).
- Course instructions articulate or link to an explanation of how the institution's academic support services (QM 7.3).
- Course instructions include student disability support services (QM 7.4).
- Course delivery is presented in online modules (standardized units).
- A video introduction and course module introductions of the course are digitally recorded via the Digital Media Classroom or screen capture software.

#### *Course Navigation and Technology*

- All course tools and media are aligned with the course learning objectives (QM 6.1).
- Navigation via the online tools and media is logical, consistent and efficient (QM 6.3).
- Course technologies are readily accessible and are current (QM 6.4, 6.5).
- The course tools promote active student learning by optimizing individual choice (QM 5.2, UDL 7.1) and autonomy.
- Course design and implementation should minimize threats and distractions to learning (UDL 7.3).

#### *Learner Interaction (among students and with faculty)*

- The requirements for student participation and interaction is clearly stated (QM5.4)
- Plan for classroom response time and feedback on assignments is clearly stated (QM5.3).
- Learning activities advance the achievement and heighten the salience of the course learning objectives (QM5.1, UDL 8.1).
- Active learning is promoted by optimizing relevance, value and authenticity (UDL 7.2) of the learning activities.
- Active learning is promoted by fostering collaboration (UDL 8.3) between students and with faculty
- Active learning is promoted by communication and increasing mastery-oriented feedback (UDL 8.4)

#### *Learning Support and Accessibility*

- Course design, navigation and implementation exemplify accessibility for all learners (QM8).
- Accessible technologies are utilized and guidance is provided on obtaining accommodations (QM 8.1).
- Alternatives are provided for the perception of auditory and visual content (QM 8.2, UDL 1.2, 1.3).
- Presentation of information should be customized to best meet the learning needs of diverse course populations (UDL 1.1).
- Course design is focused on minimizing distractions and facilitates readability by utilizing multiple media (UDL 2.5).

- Consideration is given to the clarification of vocabulary, symbols, notation and syntax unique to respective course content (UDL 2.1, 2.2, 2.3).
- The course accommodates and optimizes the use of assistive tools and technologies (QM 8.4, UDL 4.2).
- Course design varies the methods of responses and navigation as a mode for providing options for physical participation (UDL 4.1)

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