



Curriculum Development Policy

SCOPE

This policy applies to all faculty, staff, and programs at Washington Technology University.

POLICY STATEMENT

This policy provides guidance on the process for changes and additions with respect to credit-bearing courses or academic programs and outlines the roles of administrators and committees

at the college and university levels within this process.

DEFINITIONS

Curriculum Development Manual: a public document that describes the process for changes and additions to WTU courses and programs.

POLICY

A. The Curriculum Development Manual

The Office of Academic Affairs will develop and maintain a Curriculum Development Manual. The manual will:

- a. Provide resources and guidance to faculty wishing to add, change, or terminate course offerings at WTU. This includes changes to curricula and assessment items in existing courses.
- b. Focus on practical aspects of curriculum development including requesting changes, procedures used to process requests, timelines, and other considerations involved in course and program changes.
- c. Establish that the basis of effective teaching in any modality – online or in person – is strong content, pedagogy (/andragogy), and assessment; identify research-based instructional design principles for effective undergraduate education; and align these principles with their effective application in distance education settings.
- d. Be aligned with the standards required by external agencies such as accrediting bodies.

B. The Curriculum Development Manual as Policy

Once adopted, the content of the Curriculum Development Manual is considered and is treated as policy.

- a. The provisions of the Curriculum Development Manual (**Appendix 03.10.001A**) and the related definitions are incorporated by reference herein and shall be deemed to have the same force and effect as if set forth in full herein.
- b. This policy will be adopted by the administrative action of the University President.
- c. Changes to the Curriculum Development Manual will not be considered policy until formally adopted by a fully executed update to this policy.

Appendix 03.10.001A

The Curriculum Development Manual



Curriculum Development Manual

Version	Date	Changes
1.0		Original information published to Faculty Handbook
2.0	7/12/2021	Complete Rewrite
2.1	10/7/2021	Add Program Outcomes diagram
2.2	10/22/2021	Add Sequencing

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1. Introduction

1.1 Purpose

This manual is designed to provide resources and guidance to faculty wishing to add, change, or terminate course offerings at WTU. This includes changes to curricula and assessment items in existing courses.

The manual focuses on practical aspects of curriculum development including requesting changes, procedures used to process requests, timelines, and other considerations involved in course and program changes.

Some of the policies and procedures stated in this manual are aligned to standards required by external agencies such as accrediting bodies. The manual will be updated as needed to ensure continued compliance.

1.2 Policy Framework

This manual describes WTU policies and procedures and the responsibilities of faculty and WTU officers. These sit within a larger framework of standards and regulations set by accrediting and authorizing bodies. Documents related to this manual include:

Washington State Legislature: Regulations for Degree-Granting Institutions Act
<https://apps.leg.wa.gov/WAC/default.aspx?cite=250-61>

Distance Education Accrediting Commission – Accreditation Standards
<https://www.deac.org/UploadedDocuments/Handbook/Accreditation-Handbook-Part-Three.pdf>

WTU Policies
<https://www.washtechu.org/index.php/policies>

1.3 Definitions

CIP Code:

The Classification of Instructional Programs (CIP) provides a taxonomic scheme that supports the accurate tracking and reporting of fields of study and program completions activity. Information on CIP codes is available at <https://nces.ed.gov/ipeds/cipcode>.

Curricula Committee:

A permanent committee of WTU. The committee acts on behalf of the faculty to define, add, change, and remove courses and programs. The Curriculum Committee reviews and makes recommendations for new and existing curriculum. The committee also has the responsibility for reviewing all curriculum programs over two years.

Content Errors:

Content errors are instances where curricula and instructional materials contain incorrect information. Content errors are not subject to the Curriculum Change processes described in this manual. In most cases content errors should be resolved quickly by faculty, following the procedures described in the Faculty and Staff Handbook.

Course Levels:

WTU does not offer lower division courses that would generally be labelled 1XX and 2XX. WTU's degree completion programs are comprised of upper division courses (3XX and 4XX) that include advanced content and are core requirements for completion of a major.

Distance Education:

The Washington State Legislature defines "Distance learning" as a form of educational instruction other than classroom instruction to include, but not limited to, correspondence, video-conferencing, television, internet transmission, or other electronic communication.

Faculty:

The personnel who are appointed by WTU for purposes of teaching, research, mentoring, advisory roles and/or other activities relating to the development and delivery of the instructional programs of WTU.

Program of Study (Program):

The Washington State Legislature defines "Program of study" as any course or grouping of courses prerequisite to or indicative of a degree.

A degree program that differs in title and curriculum from any current program; or is comprised of a curriculum that is twenty-five percent or more different in content than any current program, is defined as an "Additional program" and requires authorization.

Moodle:

WTU's Learning Management System (LMS) for online learning.

Non-Substantive Change:

Non-substantive changes related to curriculum development include minor changes to existing courses; adding a course; and minor changes to existing programs.

Seminar:

A form of academic teaching, involving small groups, in which students are required to engage in an advanced level of critical analysis and discussion during meetings with an instructor.

Substantive Change:

Substantive changes related to curriculum development include changing the established mission or objectives of a program; major course changes to a program; adding a program; offering courses or programs at a higher or lower level than currently authorized; and changing the way student progress is measured (clock or credit hours, quarters, time-based or non-time-based).

SOC Code:

The Standard Occupational Classification (SOC) System is a federal statistical standard used by federal agencies to classify workers into occupational categories for the purpose of collecting, calculating, or disseminating data. Information on SOC codes is available at <https://www.bls.gov/soc/>. SOC codes may be used to research job outlook data.

Syllabus:

A syllabus is a guide to a course – an outline and summary of topics to be covered. It details what is expected of the student along with what the faculty member will teach and required texts. There is one syllabus per course and faculty members are not permitted to alter the syllabus in any significant way. WTU's standard syllabus structure is outlined in 2.5.1.

2. The Curriculum Change Process

2.1 Continuous Improvement

WTU believe in continuous improvement towards our mission. Nowhere is this more important than in the development and delivery of effective courses and programs to students. Program outcomes are aligned to our mission and institutional learning objectives. Course outcomes are identified to deliver on program outcomes. And curricula are designed with intentionality to engage students and facilitate their achievement of those outcomes. WTU undertakes regular curriculum evaluation to evaluate courses and programs and to make recommendations for improvements. Recommendations approved by the appropriate office are implemented, affecting subsequent outcomes, which in turn feed into the following review cycle.

Faculty are encouraged to embrace this process and play an active role in monitoring student learning and in recommending curricula changes.

2.2 Roles and Responsibilities

WTU's curriculum development and review process is designed to serve the University as it grows. It will be adapted as schools, departments, and administrative layers are added. As of this writing, WTU has one program. The Education Director acts as the Chair of that program. The University President serves as the Chancellor for Academic Affairs. And WTU's Curriculum Committee and Office of Academic Affairs are comprised of the same members. While a single person may currently be serving multiple roles, importantly the curriculum development process describes those roles independently to make their duties clear. In this way, WTU is establishing and making habitual, rigorous curriculum development practices that will form a sound foundation for expansion over time.

Faculty

Faculty may sponsor a curriculum change proposal. The sponsoring faculty write a proposal including a rationale for the change and submit it to the Program Chair.

Program Chair (Dean)

The Program Chair is responsible for undertaking a regular and systematic evaluation and curriculum review of the program, for liaising with faculty who are sponsoring proposals, for forwarding proposals to the Curricula Committee, and for implementing approved changes. Implementation of approved proposals includes sharing new and updated documentation with the Registrar, Curricula Committee, Information Technology, and Admissions.

Curricula Committee (Committee of the Office of Academic Affairs)

The Curriculum Committee is responsible for ensuring that all courses and programs have instructional integrity, address appropriate learning outcomes, fit into a sequential framework that leads to students achieving the respective competencies, and meet WTU's standards of excellence.

The WTU Curriculum Committee consists of the following standing members: Education Director, Faculty Representative, Registrar.

The committee reviews all proposals, and must approve all additions, deletions, and major modifications to credit courses and programs. Non-approved requests are returned to the Program Chair with an explanation of the determination. Approved requests are forwarded to the President.

President

Acting as 'Chancellor for Academic Affairs,' the President may choose to not approve the proposal. Non-approved requests are returned to the Program Chair (copied to the Curricula Committee) with an explanation of the determination.

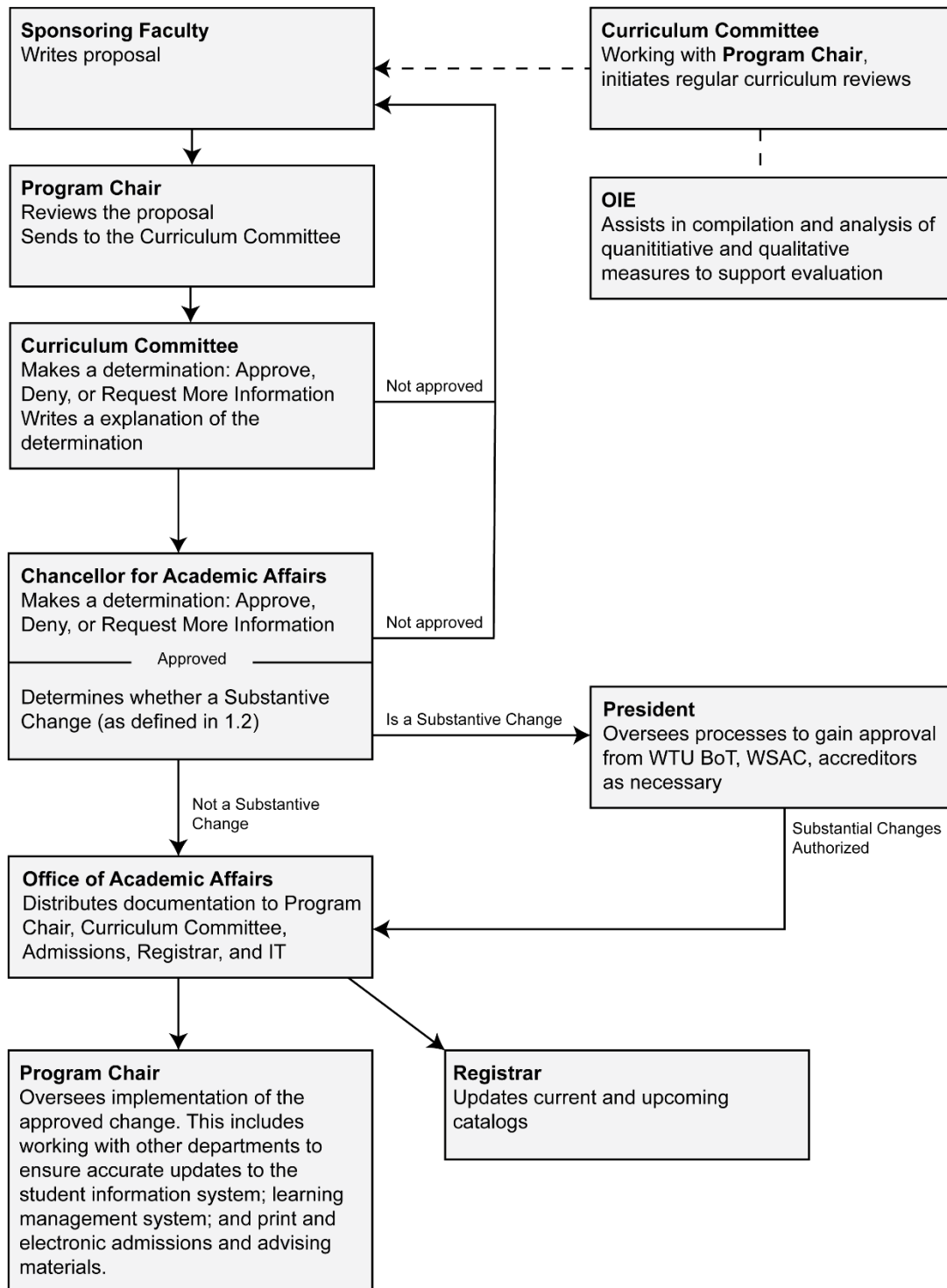
When the President is in support of a Proposal which she determines to be a Non-Substantive Change, the President forwards approval to the Program Chair (copied to the Curricula Committee) for implementation.

When the President is in support of a Proposal which she determines to be a Substantive Change, the President will determine what additional approvals are required. These may include approval by the WTU Board of Trustees or an authorizing or accrediting body.

Office of Institutional Effectiveness

The OIE works with the Program Chair to support the regular and systematic curriculum review process.

2.3 Curriculum Change Workflow



2.4 Proposal Structure

The information required for each type of change is listed below. Proposals must be complete. For example, a proposed 'Change to an Existing Program' will likely need to include the 'Removal of an Existing Course' and the 'Addition of a New Course.'

WTU currently has one program of 18 core requirement courses so a change to a course is inherently a change to the program and vice versa. The procedure described, however, is designed to support the change process into the future (for example, when a single course might be used across multiple curricula).

2.4.1 Addition of a New Course

Course Title

Discipline

Course Level (See definitions 1.3. A course number may be proposed.)

Number of quarter credits (specify lecture and lab)

Hours per Week (specify for lecture, lab, seminar, independent study)

Year/Quarter the course will be offered

Detailed Rationale for the course including how it applies to the Program/s

Course Syllabus (as described in 2.5.1)

Formal Catalog Description (including prerequisites/corequisites)

Additional staff and/or faculty required

Additional space and/or equipment required

Additional library resources required (include references to books and periodicals)

Names of sponsoring faculty

2.4.2 Removal of an Existing Course

Course Title

Course Number

Year/Quarter the course will be removed

Curricula (programs) in which this course is included

Courses for which this course is currently a prerequisite

Rationale for deleting the course

Names of sponsoring faculty

2.4.3 Change to an Existing Course

See Appendix A: BSIS Course Change Template

Course Title

Course Number

Curricula (programs) in which this course is included

Courses for which this course is currently a prerequisite

Existing Course Information

Current number of quarter credits

Current hours per Week (specify for lecture, lab, seminar, independent study)

Current Formal Catalog Description (including prerequisites/corequisites)

Proposed Changes

Rationale for the proposed changes

Proposed number of quarter credits

Proposed hours per Week (specify for lecture, lab, seminar, independent study)

Proposed Formal Catalog Description (including prerequisites/corequisites)

New and Old Course Learning Outcomes

New and Old Topics and Module Learning Outcome

Year/Quarter the change will take effect

Names of sponsoring faculty

2.4.4 Addition of a New Program

The addition of a new program requires approval of the WTU Board of Trustees. The Board of Trustees is responsible for the University Strategic Plan which identifies overarching priorities for the University as it strives to achieve its mission. New programs, particularly those that would fall outside of the School of Computer and Information Science, are significant strategic decisions that require thorough market analysis and feasibility studies. We expect that the addition of schools and programs at WTU will in most cases be instigated by WTU's strategic planning processes.

Name of Program (Name of Degree)

Discipline

CIP Code (Classification of Instructional Programs)

Delivery Mode - Hybrid (50% to 99% delivered online) or Online (100% delivered online)

Additional staff and/or faculty required

Additional space and/or equipment required

Rationale

Describe the program concept

Purpose

Program Objectives

Admission Requirements

Learning Outcomes (include mapping to Institutional Learning Outcomes, see 3.2)

Describe how it furthers the mission and strategic goals of WTU

List Courses in the Proposed Program (include Course Number, Title, and Credit Hours)

Names of sponsoring faculty

2.4.5 Discontinuance of an Existing Program

The removal of a program requires approval of the WTU Board of Trustees. Like program addition, this is considered a significant change as it relates to the University's strategic planning, and it constitutes a

substantive change in the eyes of authorizing and accrediting bodies. The removal of any program requires a teach-out plan that must be approved prior to the time students will no longer be accepted into the program. We expect that the removal of programs at WTU will in most cases be instigated by WTU's strategic planning processes.

Name of Program (Name of Degree)

Discipline

CIP Code (Classification of Instructional Programs)

List the courses to be removed (include Course Number, Title, and Credit Hours)

Rationale for closing the Program (enrollment demand, job placement opportunities, etc.)

Describe how affected students will be helped to complete the program (including teach out agreements)

Names of sponsoring faculty

2.4.6 Change to an Existing Program

Existing Program Title

Proposed Program Title

Discipline

Year/Quarter the change will take place

Courses in the Current Program (include Course Number, Title, and Credit Hours)

Courses in the Proposed Program (include Course Number, Title, and Credit Hours)

Detailed Rationale for the change to the Program

Names of sponsoring faculty

2.5 Guidance for Proposal Writing

2.5.1 Standard Syllabus Structure and Format

WTU's current standard syllabus is structured as follows:

Course Title:

Course Number:

Course Quarter Credits:

Course Catalog Description:

Required Resources (Materials including Textbooks):

Course Outcomes

Course Keywords

Assignment/Grading Summary

Commencing 2022, the following will be standard inclusions:

Summary of Course Content (Major Topics of Study and Module Learning Outcomes)

Methods of Instruction

Come to Class Prepared

Code of Conduct

On publishing an instance of the course to the learning management system, instructors are required to add the following information to the syllabus:

Academic Year:

Instructor Name:

Office Hours:

Office Telephone:

Instructor Email:

2.5.2 SmartCatalog Curriculum Management System

As of the writing of this manual, WTU is transitioning to use the SmartCatalog Curriculum Management System to handle the curriculum change workflow. The SmartCatalog system provides the following standard form: New Course, Change Course, Delete Course, New Program, Change Program, Delete Program. Forms submitted by sponsoring faculty are processed through the WTU Curriculum Change Workflow (described in 2.3).

All curriculum changes will be required to be submitted using the SmartCatalog system commencing January 2022.

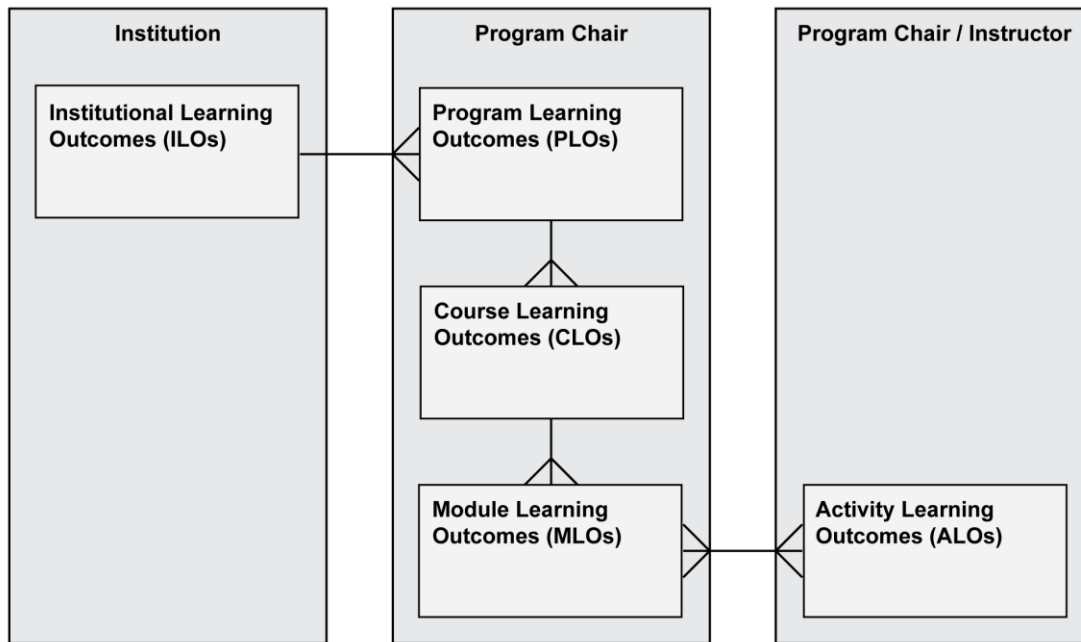
3. Policies

3.1 WTU Philosophy of General Education

Washington Technology University supports the general education of all students by offering courses that provide students with knowledge and skills that help them attain their full potential as informed individuals and responsible members of society. While promoting confidence and the integrity necessary to succeed in diverse careers and communities, the University is a student-centered learning environment providing a comprehensive education with emphasis on career and applied knowledge. To that end, the University's policy mandates that general education courses should facilitate each student's ability to communicate, express ideas and opinions with clarity and proficiency, analyze information, draw logical conclusions, use technology appropriately, and recognize the value of responsible citizenship and cultural and intellectual diversity.

3.2 WTU's Learning Outcomes Model

We define learning outcomes at four levels. Institutional Outcomes are what the student should be able to do upon graduation. Program Outcomes are what the student should be able to do upon completion of a program. Course Outcomes are what the student should be able to do upon completion of a course. Learning Activity Outcomes are what the student should be able to do upon completion of a planned instructional activity such as a lecture, lesson, exercise, seminar, or lab.



3.3 Institutional Learning Outcomes (ILOs)

All WTU graduates are expected to demonstrate five essential Institutional Learning Outcomes. Throughout their degree program of study, students will be assessed and reviewed and upon completion of their degree programs, graduates should be able to:

1. Express ideas effectively, ethically, and responsibly through written and oral communication

1.WC Written Communication

- 1.WC.1 Assemble, assess, incorporate, and present written knowledge and information both critically and creatively
- 1.WC.2 Understand many of the economic, legal, and social issues surrounding the use of information
- 1.WC.3 Compose documents that are logically organized and developed with reason and evidence
- 1.WC.4 Think critically and write purposefully and capably for academic and, in some cases, professional audiences
- 1.WC.5 Compose documents that display appropriate format, structure, and stylistic choices
- 1.WC.6 Compose documents that employ appropriate syntax, grammar, punctuation, and spelling

1. OC Oral Communication

- 1.OC.1 Apply discipline-specific and/or professional techniques to communicate in assigned task
- 1.OC.2 Present a well formulated concept/argument before an audience
- 1.OC.3 Speak in a clear and concise manner

- 1.OC.4 Understand the use of both verbal and non-verbal communication
- 1.OC.5 Implement the skills of listening through active participation
- 1.OC.6 Converse in a polite and appropriate manner and respond to the needs of diverse audiences and contexts

2. Utilize critical thinking and problem-solving skills

2.MC Mathematical Computation

- 2.MC.1 Use mathematical reasoning and problem solving to draw logical conclusions
- 2.MC.2 Demonstrate an awareness of mathematical principles and practices and their impact on social policy
- 2.MC.3 Research, retrieve, and use presented data to solve problems and draw conclusions
- 2.MC.4 Accesses needed information effectively and efficiently
- 2.MC.5 Demonstrate an appreciation of how the same data, in multiple formats, can convey multiple meanings
- 2.MC.6 Apply basic algebraic and mathematical computation and analysis

2.CT Critical Thinking

- 2.CT.1 Identify and explain relationships; draw and justify reasonable inferences and conclusions; demonstrate evidence of insight through reflection
- 2.CT.2 Locate, consider, and question information from a variety of sources
- 2.CT.3 Determine the extent and nature of information needed
- 2.CT.4 Use information effectively to accomplish a specific purpose
- 2.CT.5 Demonstrate independent thinking in articulating and solving problems
- 2.CT.6 Identify a problem and devise and implement a plan of action
- 2.CT.7 Consider usual and unusual tactics or strategies for problem solving
- 2.CT.8 Develop solutions with an appreciation for the probability of success
- 2.CT.9 Demonstrate an appreciation for new ideas and how they might influence oneself and others

3. Demonstrate the ability for scientific and quantitative reasoning

3.QR Quantitative Reasoning

- 3.WR.1 Use basic scientific information as the foundation for the analysis of evidence and the methodology of scientific inquiry
- 3.WR.2 Apply scientific and technical modes of inquiry, individually and collaboratively" to critically evaluate existing or alternative explanations, solve problems and make evidence-based decisions in an ethical manner
- 3.WR.3 Assess the strengths and weaknesses of scientific studies and critically examine the influence of scientific and technical knowledge

- 3.WR.4 Gather, comprehend, and communicate scientific and technical information to explore ideas, models and solutions and generate further questions
- 3.WR.5 Analyze critically science-based issues in contemporary society (scientific literacy)

4. Articulate a basic understanding of the inter-relationship of technology to problem-solving, communication, and society

4.CL Computer Literacy

- 4.CL.1 Utilize technology to find, retrieve, and evaluate information
- 4.CL.2 Implement problem-solving techniques and technology tools to collect, organize, analyze, and synthesize information from a variety of sources, including the Internet
- 4.CL.3 Employ technology to communicate knowledge and ideas through media for various purposes and audiences
- 4.CL.4 Utilize software to solve problems and/or case analysis
- 4.CL.5 Utilize, manage, and adapt to changing technology in a learning environment, the workplace, and daily life
- 4.CL.6 Utilize technology responsibly and demonstrate a recognition of and respect for the implications of its societal and environmental use

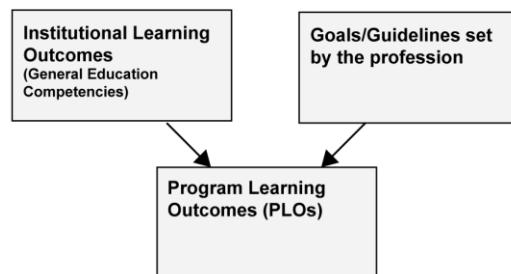
5. Summarize and apply the socio-economic, political, and cultural frameworks of societies within the global context

5.CC Cultural Competence

- 5.CC.1 Recognize the values, behaviors, and viewpoints of diverse populations
- 5.CC.2 Demonstrate awareness of the negative effects of stereotyping and prejudice
- 5.CC.3 Demonstrate an awareness of historic and global perspective
- 5.CC.4 Show respect for the diversity and ideas of others
- 5.CC.5 Demonstrate responsible citizenship

3.4 Program Learning Outcomes (PLOs)

To determine program outcomes, we ask “What do our students need to learn to become professionals in the field? What theories, concepts and techniques should they be able to apply upon program completion?” These ‘goals or guidelines of the profession’ alongside the ILOs inform the development of the PLOs.



To ensure programs meet WTU’s institutional learning outcomes, Program Learning Outcomes are mapped to the ‘top level’ ILOs. For example, BSIS PLO 8 “Understand professional, ethical, legal, security, social issues, and responsibilities” may be mapped to ILO 4 “Articulate a basic understanding of the inter-relationship between technology, and problem-solving, communication, and society.” In this case, the instructional designer is indicating that the student will have the opportunity to demonstrate evidence that they have achieved PLO 8, and in doing so, that will contribute evidence toward the achievement of ILO 4.

3.5 Course Learning Outcomes (CLOs)

To be able to determine that a curriculum – a set of courses – meets a program’s outcome requirements, Course Learning Outcomes are mapped to Program Learning Outcomes.

3.5 Writing Learning Outcomes

3.5.1 Writing Measurable Outcomes

Effective learning outcomes are specific about the knowledge, skills, and abilities students will obtain as well as the specific conditions and standards of performance by which students will be measured. Learning outcomes should be written in terms of an observable, behavioral outcome, i.e., a description of what the student will be able to do. When writing the outcome in performance terminology, use a clear, targeted verb that provides directions about the expectations of student performance at the completion of instructional activities. Choose a verb that is focused and targets a level of performance appropriate for the course. Concrete verbs such as “define,” “argue,” or “create” are more helpful for assessment than vague verbs such as “know,” “understand,” or passive verbs such as “be exposed to.”

Each learning outcome must be **measurable** and **attainable** in the modality (distance education or in-person) through which the learning will be offered and should include the criteria for evaluating student performance. Effective learning outcomes indicate a degree of accuracy, a quantity of correct responses or some other type of measurable information.

Bloom’s Taxonomy is a well-known description of levels of educational objectives. It may be useful to consider this taxonomy when defining your learning outcomes.

Most courses in higher education focus on the cognitive domain, thus it is important to examine various levels of cognitive understanding. The cognitive domain is broken-down into six categories:

- | | | |
|---|---------------|--|
| 1 | Knowledge | to know specific facts, terms, concepts, principles, or theories |
| 2 | Comprehension | to understand, interpret, compare, and contrast, explain |
| 3 | Application | to apply knowledge to new situations, to solve problems |
| 4 | Analysis | to identify the organizational structure of something; to identify parts, relationships, and organizing principles |
| 5 | Synthesis | to create something, to integrate ideas into a solution, to propose an action plan, to formulate a new classification scheme |
| 6 | Evaluation | to judge the quality of something based on its adequacy, value, logic, or use |

Some examples of action words frequently used in learning outcomes are included in the table below based on Bloom’s levels of cognitive behaviors.

Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
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define	classify	apply	analyze	arrange	appraise
identify	describe	compute	appraise	assemble	assess
indicate	discuss	construct	calculate	collect	choose
know	explain	demonstrate	categorize	compose	compare
label	express	dramatize	compare	construct	contrast
list	identify	employ	contrast	create	decide
memorize	locate	give examples	criticize	design	estimate
name	paraphrase	illustrate	debate	formulate	evaluate
recall	recognize	interpret	determine	manage	grade
record	report	investigate	diagram	organize	judge
relate	restate	operate	differentiate	perform	measure
repeat	review	organize	distinguish	plan	rate
select	suggest	practice	examine	prepare	revise
underline	summarize	predict	experiment	produce	score
	tell	schedule	inspect	propose	select
	translate	shop	inventory	set-up	value
		sketch	question		
		translate	relate		
		use	solve		

3.5.2 Writing Outcomes Appropriate to the Degree Level

Learning outcomes must be appropriate to the degree level for which they are written. While WTU currently offers only one undergraduate level program, we must still be able to articulate how expectations for that program differ from programs we may one day offer at higher or lower levels.

The Office of Assessment at the University of Missouri provide the following points to guide the formulation of degree-level-appropriate outcomes:

The learning outcomes for **undergraduate programs** require a relatively lower order of abstract thought or skills than higher degree levels. For example, undergraduate students may engage in research, but the scope of the project is limited and there may not be the expectation that the research will contribute to the existing body of knowledge. As examples, undergraduate student outcomes may require students:

- to describe facts, trends, sequences, categories, or principles;
- to compare or distinguish between theories;
- to state a problem in their own words;
- to present information in a variety of formats; or
- to apply previous knowledge to new situations.

Learning outcomes for **graduate or professional** courses and programs generally require a high level of abstract thought (e.g., synthesis, analysis, creation). As examples, graduate learning outcomes

may require students:

- to write appropriately to the methodology of the field of study;
- to synthesize critical, theoretical, historical, and/or individual ideas;
- to apply prior knowledge and skills to develop new knowledge, original work, or creative expression;
- to contribute an original piece of research or scholarship that adds to the existing knowledge in the field;
- to apply professional values;
- to sustain learning and its application and expression;
- to solve problems related to the field of study;
- to use appropriate technologies to communicate, collaborate, conduct research, and/or solve problems; or
- to conduct reasoned arguments.

4. Instructional Design

4.1 Distance Education Instructional Design Principles

WTU believes that the basis of effective teaching in any modality – online or in person – is strong content, pedagogy, and assessment. While online instruction precludes some traditional forms of in-person contact, it creates opportunities for others. By thoughtfully applying online technologies, we can encourage interaction with and among students, and deliver conditions that facilitate learning.

Instructors at WTU are expected to develop their teaching practices based on a comprehensive foundation knowledge of distance education. Instructors are asked to review ‘Theoretical Frameworks in Distance Education’ By: Li Cheng, Ryan Rushing, Zhen Xu and Nihan A. Dogan (http://www.aritzhaupt.com/distance_education/theoretical-frameworks/). This work provides a primer in philosophical, psychological foundations, and theoretical foundations as well as common distance education theories.

Practical instructional design guidance is based on our adoption of principles identified by Chickering and Gamson (Chickering, A. W., & Gamson, Z. (1987). Seven principles for good practice in undergraduate education. American Association for Higher Education Bulletin, 40(7), 3–7.) The table below is an adaptation and extension of work published by the University of North Texas Health Science Center at Fort Worth (<https://www.unthsc.edu/center-for-innovative-learning/teaching-online-seven-principles-good-practice/>) and the University of Michigan Center for Research on Learning and Teaching (https://crlt.umich.edu/gsis/p4_6). It aligns the seven principles with suggested practices, including implementation in WTU’s online environments.

1. Engage in Frequent and Meaningful Student – Instructor Interaction		
Research tells us...	Implementation	Online Practices and Tools
Frequent student – instructor contact in and	<ul style="list-style-type: none"> • Share past experiences, values, and attitudes 	<ul style="list-style-type: none"> • https://www.meetup.com/ provides access to numerous

<p>out of classes is an important factor in student motivation and involvement. Instructor concern helps students get through rough times and keep on working. Knowing a few instructors well enhances students' intellectual commitment and encourages them to think about their own values and future.</p>	<ul style="list-style-type: none"> • Get to know your students by name • Treat students as human beings with full real lives; ask how they are doing • Hold "out of class" review sessions • Use email regularly to encourage and inform • Hold regular "hours" where students can drop in for informal visits • Encourage students to attend professional meetings or other online events in your field 	<p>professional meetings and events</p> <ul style="list-style-type: none"> • Microsoft Teams supports a range of meeting types
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2. Develop Reciprocity and Cooperation Among Students		
Research tells us...	Implementation	Online Practices and Tools
<p>Learning is enhanced when it is more like a team effort than a solo race. Good learning, like good work, is collaborative and social, not competitive and isolated. Working with others often increases involvement in learning. Sharing one's own ideas and responding to others' reactions improves thinking and deepens understanding.</p>	<ul style="list-style-type: none"> • Ask students to share information about each other's backgrounds and academic interests • Encourage students to prepare together for classes or exams • Create study groups within your course • Ask students to give constructive feedback on each other's work and to explain difficult ideas to each other • Use small group discussions, collaborative projects in and out of class, group presentations, and case study analysis • Ask students to discuss key concepts with other students whose backgrounds and viewpoints are different from their own • Encourage students to work together 	<ul style="list-style-type: none"> • Use Microsoft Teams to host student presentations • Moodle Workshop activity – peer assessment activity • Use Moodle Q&A forum – to have students respond to an anonymous piece of student work • Moodle Wiki – allows students to collaborate to create some of the course content themselves • Moodle Database activity – students <i>build</i>, display, and search a bank of records together • Moodle or Teams Chat activity – written (reviewable) conversations in real time

3. Encourage Active Learning		
Research tells us...	Implementation	Online Practices and Tools
<p>Learning is not a spectator sport. Students do not learn much just sitting in classes listening to instructors, memorizing assignments, and spitting out answers. They must talk about what they are learning, write about it, relate it to past experiences, and apply it to their daily lives. They must make what they learn part of themselves.</p>	<ul style="list-style-type: none"> • Ask students to present their work to the class • Give students concrete, real life situations to analyze • Ask students to summarize similarities and differences among research findings, artistic works, or laboratory results. • Model asking questions, listening behaviors, and feedback • Encourage use of professional journals • Use technology to encourage active learning • Encourage use of internships, study abroad, service learning and clinical opportunities • Use class time to work on projects 	<p>Microsoft Teams – and Moodle - allow for:</p> <ul style="list-style-type: none"> • Audience polling (Moodle Choice activity) • Live, text-based, reviewable Chat – Moodle and Teams • Presentations delivered by students • WTU virtual library provides students with access to professional journals • J&B Virtual Labs allow students to safely learn and practice foundational information security skills

4. Give Prompt Feedback		
Research tells us...	Implementation	Online Practices and Tools
<p>Knowing what you know and don't know focuses learning. Students need appropriate feedback on performance to benefit from courses. In getting started, students need help in assessing existing knowledge and competence. In classes, students need frequent opportunities to perform and receive suggestions for improvement. At various points during college, and at the end, students need chances</p>	<ul style="list-style-type: none"> • Return examinations promptly, preferably within a week, if not sooner • Schedule brief meetings with the students to discuss their progress • Prepare problems or exercises that give students immediate feedback on how well they are doing. (e.g., Angelo, 1993) • Give frequent quizzes and homework assignments to help students monitor their progress • Give students written comments on the strengths and weakness of their tests/papers • Give students focused feedback on their work early in the term 	<ul style="list-style-type: none"> • Moodle Quiz activity provides immediate results for <i>learning</i> quizzes • Teams Meeting – schedule a meeting with an individual student • Moodle <i>Assignment</i> activity includes the opportunity for instructor feedback – use for developmental purposes during a course

<p>to reflect on what they have learned, what they still need to know, and how to assess themselves.</p>	<ul style="list-style-type: none"> • Consider giving a mid-term assessment or progress report • Be clear in relating performance level/expectations to grade • Communicate regularly with students via email about various aspects of the class 	
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5. Emphasize Time on Task		
Research tells us...	Implementation	Online Practices and Tools
<p>Time plus energy equals learning. There is no substitute for time on task. Learning to use one's time well is critical for students and professionals alike. Students need help in learning effective time management. Allocating realistic amounts of time means effective learning for students and effective teaching for instructors.</p>	<ul style="list-style-type: none"> • Communicate to students the amount of time they should spend preparing for class. • Expect students to complete their assignments promptly • Underscore the importance of regular work, steady application, self-pacing, scheduling. • Divide class into timed segments to keep on task • Meet with students who fall behind to discuss their study habits, schedules. • Don't hesitate to refer students to learning skills professionals on campus. • Use technology to make resources easily available to students. • Consider using mastery learning, contract learning, and computer assisted instruction as appropriate. 	<ul style="list-style-type: none"> • Use 'Faculty Expectations' section of Moodle course template • Settings in Moodle's Assignment activity (e.g. 'Prevent Late Submissions' allow you to prevent or discourage late submission • Moodle New student Orientation course includes guidance on these success factors • External tools (LTI) enable the provisioning of e-textbooks and library resources

6. Communicate High Expectations		
Research tells us...	Implementation	Online Practices and Tools
Expect more and you will get it. High expectations are important for everyone—for the poorly prepared, for those unwilling to exert themselves, and for the bright and well-motivated. Expecting students to perform well becomes a self-fulfilling prophecy when instructors hold high expectations for themselves and make extra efforts.	<ul style="list-style-type: none"> • Make your expectations clear at the beginning of the course both in writing and orally. Tell them you expect them to work hard • Periodically discuss how well the class is doing • Encourage students to write; require drafts of work. Give students opportunities to revise their work • Set up study guidelines • Publish students' work on a course website. This often motivates students to higher levels of performance • Be energized and enthusiastic in your interaction with students 	<ul style="list-style-type: none"> • Use 'Faculty Expectations' section of Moodle course template

7. Respect Diverse Physical Abilities, Talents, and Ways of Learning		
Research tells us...	Implementation	Online Practices and Tools

<p>There are many roads to learning. People bring different abilities, talents, and styles of learning to college. Students rich in hands-on experiences may not do so well with theory. Students need the opportunity to show their talents and learn in ways that work for them. They can be pushed to learning in new ways that do not come so easily.</p>	<ul style="list-style-type: none"> • Design experiences to be accessible to the widest scope of possible learners • Use a range of teaching activities to address a broad spectrum of students • Provide extra material or exercises for students who lack essential background knowledge or skills • Identify students' learning styles, backgrounds at the beginning of the semester • Use different activities in class – videos, discussions, lecture, groups, guest speakers, working in pairs • Use different assignment methods – written, oral, projects, etc. – to engage as many ways of learning as possible (e.g., visual, auditory) • Give students a real-world problem to solve that has multiple solutions. Provide examples and questions to guide them 	<ul style="list-style-type: none"> • The Moodle Assignment activity includes a Groupings setting that allows you to assign certain material/work to specific students (i.e., different sets of learners) • Resources appealing to different learning styles can easily be included in a Moodle learning module – text, video, discussion forum • Use Moodle Q&A forum to have each student develop a solution – once they have done this they will be able to see other students' solutions
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4.2 Selecting Learning Resources

At each level of development (program, course, module, and learning activity) curriculum developers are asked to select appropriate core and supplemental student learning resources, indicating their role and how they will be integrated into the curriculum. Selected resources are delivered digitally via the Virtual Library and Learning Management Systems.

When selecting resources, use the Learning Object Review Instrument by Nesbit, Belfer, and Leacock (https://www.academia.edu/7927907/Learning_Object_Review_Instrument_LORI) to evaluate the resource in the following areas as appropriate:

1. **Content Quality:** Accuracy, balanced presentation of ideas, appropriate level of detail, and reusability in varied contexts
2. **Learning Goal Alignment:** Alignment among learning goals, activities, assessments, and learner characteristics
3. **Feedback and Adaptation:** Adaptive content or feedback driven by differential learner input or learner modeling
4. **Motivation:** Ability to motivate and interest an identified population of learners
5. **Presentation Design:** Design of visual and auditory information for enhanced learning and efficient mental processing
6. **Interaction Usability:** Ease of navigation, predictability of the user interface, and quality of the interface help features

7. **Accessibility:** Design of controls and presentation formats to accommodate disabled and mobile learners

8. **Standards Compliance:** Adherence to standards and operability on WTU technical platforms

Core learning resources, such as a course textbook or lab, should be selected by a panel of evaluators including the program chair, faculty members who are or will teach the course, the librarian, and the eLearning director. Each panel member should score the resource independently in each appropriate category, with the scores averaged to determine the panel's rating.

See **Appendix B – LORI Learning Resource Scoring Sheet.**

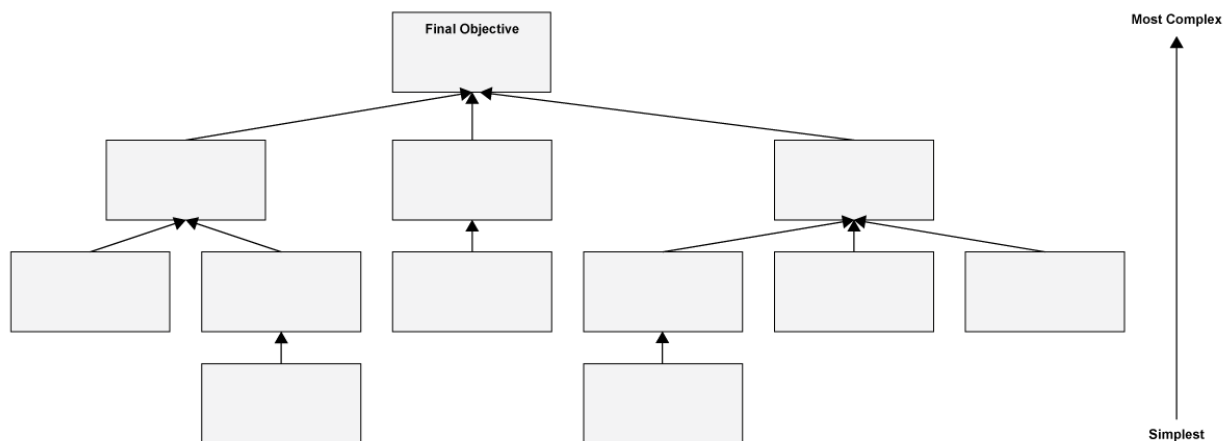
4.3 Sequencing Learning Experiences

We sequence at three primary levels: courses within a program (pre-requisites and co-requisites), modules or units within a course, and learning activities within a module.

As our current program is primarily technical cognitive learning, the predominant sequencing strategy to be used is hierarchical task analysis.

Hierarchical Task Analysis is described in a practical way by Patricia Cranton in 'Planning Instruction for Adult Learners.' (A copy is available in the WTU library.) The procedure is summarized here:

1. Select the objective for analysis. The final or overall objective of a course or segment of a course may be chosen or, alternatively, only the more difficult and complex objectives within a course.
2. Considering one objective at a time, ask, "What must the person know in order to achieve this objective?" List these. Order does not matter at this point.
3. For each of the items listed in step 2, ask again, "What must the person know in order to learn this?" Continue to list the components of learning.
4. Repeat this process until the answers to the question are things that students likely already know.
5. For the lists generated, arrange each item in a diagram as shown here:



6. Ask an experienced learners and other subject matter experts to review the analysis. Ask them to look for gaps and relationships between items that do not seem right.

Appendix A – BSIS Course Change Template

Course Title:

Course Number:

Program/s in which this course is included: Bachelor of Science in Information Security

Courses for which this course is currently a prerequisite:

Sponsoring Faculty:

Rationale:

When this change will take effect:

Name:		
Catalog Description:		
Quarter Credits:	5	
Hours:	Lecture: 30 hours Other Student/Faculty Interaction: 20 hours Out Of Class Preparation: 100 hours	
CLOs:	•	

Module 1 Topic/s:		
Outcomes:	•	

Module 2 Topic/s:		
Outcomes:	<ul style="list-style-type: none">•	

Module 3 Topic/s:		
Outcomes:	<ul style="list-style-type: none">•	

Module 4 Topic/s:		
Outcomes:	<ul style="list-style-type: none">•	

Module 5 Topic/s:		
Outcomes:	<ul style="list-style-type: none">•	

Module 6 Topic/s:		
Outcomes:	•	

Module 7 Topic/s:		
Outcomes:	•	

Module 8 Topic/s:		
Outcomes:	•	

Module 9 Topic/s:		
Outcomes:	•	

Module 10 Topic/s:		
Outcomes:		

Current Course Outcomes Map:

CLOs

PLOs		1	2	3	4	5	6	7	8
1	Identify the elements of an information system and understand how software is developed and used within the information system								
2	Use and apply mathematical concepts appropriate to the development of software for a computer and information system								
3	Demonstrate background knowledge of Operating Systems, Networking, Data Communications, Database Technology, Information Systems Planning, and Project Management								
4	Analyze an information systems problem, define performance requirements and specifications needed to solve an information security problem								
5	Identify solutions while recognizing the social and ethical impact of computing on individuals, organizations, and society								
6	Demonstrate effective team communication								
7	Use current techniques, skills, and tools necessary for information systems practices by recognizing the need for, and the ability to								

	engage in, continuing professional development								
8	Understand professional, ethical, legal, security, social issues, and responsibilities								
9	Demonstrate the use of various computer forensic software tools and techniques as well as follow proper legal procedures for obtaining, analyzing, and reporting digital forensic evidence								
10	Explain the findings of a cyber forensic investigation in both written form and in oral form								
11	Identify and analyze legal issues within technology, regarding standards, compliance, contracts, computer crime, privacy, obscenity, and intellectual property								
12	Compare and contrast techniques for preventing unauthorized access to computer networks and apply measures for minimizing the damage caused by network intruders								
13	Evaluate and implement security controls for an information system to provide assurance where the security processes or controls are implemented								
14	Evaluate an implemented Governance Framework for its effectiveness and usefulness to an organization								
15	Identify the security mechanisms contained within various computing devices used to protect it while allowing it access to external data and other connected devices								

New Course Outcomes Map:

		1	2	3	4	5	6	7	8
		PLOs							
1	Identify the elements of an information system and understand how software is developed and used within the information system								
2	Use and apply mathematical concepts appropriate to the development of software for a computer and information system								
3	Demonstrate background knowledge of Operating Systems, Networking, Data Communications, Database Technology, Information Systems Planning, and Project Management								
4	Analyze an information systems problem, define performance requirements and specifications needed to solve an information security problem								
5	Identify solutions while recognizing the social and ethical impact of computing on individuals, organizations, and society								
6	Demonstrate effective team communication								
7	Use current techniques, skills, and tools necessary for information systems practices by recognizing the need for, and the ability to engage in, continuing professional development								

8	Understand professional, ethical, legal, security, social issues, and responsibilities								
9	Demonstrate the use of various computer forensic software tools and techniques as well as follow proper legal procedures for obtaining, analyzing, and reporting digital forensic evidence								
10	Explain the findings of a cyber forensic investigation in both written form and in oral form								
11	Identify and analyze legal issues within technology, regarding standards, compliance, contracts, computer crime, privacy, obscenity, and intellectual property								
12	Compare and contrast techniques for preventing unauthorized access to computer networks and apply measures for minimizing the damage caused by network intruders								
13	Evaluate and implement security controls for an information system to provide assurance where the security processes or controls are implemented								
14	Evaluate an implemented Governance Framework for its effectiveness and usefulness to an organization								
15	Identify the security mechanisms contained within various computing devices used to protect it while allowing it access to external data and other connected devices								

Previously linked **Program Outcomes** that will not be covered after this change:

How are these **Program Outcomes** being addressed (possibly by other changes in your larger proposal):

Signatures of Sponsoring Faculty

_____	_____	_____
Name	Signature	Date
_____	_____	_____
Name	Signature	Date
_____	_____	_____
Name	Signature	Date
_____	_____	_____
Name	Signature	Date

Appendix B – LORI Learning Resource Scoring Sheet

Learning Resource: _____

Reviewer: _____

	LOW				HIGH	
1. Content Quality: Accuracy, balanced presentation of ideas, appropriate level of detail, and reusability in varied contexts	1	2	3	4	5	NA
2. Learning Goal Alignment: Alignment among learning goals, activities, assessments, and learner characteristics	1	2	3	4	5	NA
3. Feedback and Adaptation: Adaptive content or feedback driven by differential learner input or learner modeling	1	2	3	4	5	NA
4. Motivation: Ability to motivate and interest an identified population of learners	1	2	3	4	5	NA
5. Presentation Design: Design of visual and auditory information for enhanced learning and efficient mental processing	1	2	3	4	5	NA
6. Interaction Usability: Ease of navigation, predictability of the user interface, and quality of the interface help features	1	2	3	4	5	NA
7. Accessibility: Design of controls and presentation formats to accommodate disabled and mobile learners	1	2	3	4	5	NA
8. Standards Compliance: Adherence to standards and operability on WTU technical platforms	1	2	3	4	5	NA

General Remarks:
