UCC-21 Example Guidelines

General Introductions

	Fine Arts	Humanities	Social Science	Natural Science
Tier 1	The fine arts courses in Tier 1 have as their central goal that students will be able to demonstrate some of the ways in which art forms are structured, how information is obtained via various types of experiences and how that information is used to explain or evaluate works of art. Departments must make a case for how their Tier 1 course(s) can effectively attain this goal.	The humanities courses in Tier 1 have as their central goal that students will be able to demonstrate how knowledge is generated in the humanities, specifically, how information is obtained via various forms of experience and how that experience is used to arrive at informed conclusions or creative results. Departments must make a case for how their Tier 1 course(s) can effectively attain this goal.	The social science courses in Tier 1 have as their central goal that students will be able to demonstrate how social scientists generate knowledge, specifically, how information (e.g., data) is obtained via various forms of experience and how that experience and/or data are used to arrive at informed conclusions. Departments must make a case for how their Tier 1 course(s) can effectively attain this goal.	The natural science courses in Tier 1 have as their central goal that students will be able to demonstrate how science generates knowledge, specifically, how information (data) is obtained via various forms of experience and how those data are used to arrive at informed conclusions. While this is most effectively done via inquiry-based laboratory experiences, departments can make a case for how the non-lab experience in their Tier 1 course(s) can effectively attain this learning objective.

	Fine Arts	**Humanities**	**Social Science**	**Natural Science**
Tier 1	**Experience** into **information** (isolate discrete, recognizable, usable facts) Given a novel context (question or study), students can: 1. accurately observe and describe works of art. 2. describe or explain how the context of experiencing works of art (e.g. how the social or historical events surrounding a work's creation, or a work's relation to the other arts) influences the information obtained from that work. 3. use diverse ways to experience works of art (e.g., research in the library and on-line, visiting museums, live and recorded performances as well as in-class demonstrations) 4. develop strategies for reflecting on experience and having those reflections remain accessible	**Experience** into **information** (*isolate discrete, recognizable, usable facts*) Given a novel context (question or study), students can: 1. accurately observe (read) and reconstruct (write, speak) elements in the historical, philosophical, literary and(or) linguistic realms to develop new ideas. 2. describe or explain how theory or context influences the use of elements in the various realms to generate new information or insights. 3. use diverse ways to experience historical, philosophical, literary, and linguistic works (e.g. primary and secondary sources) 4. develop strategies for reflecting on experience and having those reflections remain accessible	**Experience** into **information** (*isolate discrete, recognizable and usable facts)* Given a novel context (question or study), students can: 1. explain how to use observation and(or) measurement to obtain accurate information about the natural and social worlds 2. describe or explain how context (e.g., of measurement protocols, theoretical frameworks, and study design) influences the usefulness of the information obtained. 3. describe or explain diverse ways of experiencing the natural and social worlds (observation, comparison, experimentation). 4. develop strategies for evaluating validity and relevance of data or experience. 5. develop strategies for reflecting on experience and having those reflections remain accessible.	**Experience** into **information** (*isolate discrete, recognizable and usable facts)* Given a novel context (question or study), students can: 1. explain how to use observation and(or) measurement to obtain accurate information about the natural world. 2. describe or explain how the context of measurement protocols and study design influence the usefulness of the information obtained. 3. describe or explain diverse ways of experiencing the natural world (observation, comparison, experimentation). 4. develop strategies for evaluating data validity and relevance.

Transformational Goals – Experience into Information

	Transformational Goals – Information into Knowledge

	Fine Arts	Humanities	Social Science	Natural Science
Tier 1	**Information** into **knowledge** (*analyze facts within an intellectual framework, discover meaning in experience*) Given a novel context, students (working independently as well as collaboratively) can: 1. analyze paintings, sculpture, music, drama, or dance to identify styles, periods, movements, genres, structural elements, or media. 2. describe or explain how changes in style, media, technology, and context (including society) are incorporated into the arts. 3. integrate information from multiple sources (e.g., performances, exhibitions, and library/internet) to develop new knowledge and insights. 4. compare new information to existing knowledge to identify consonance and dissonance 5. communicate knowledge in written form and , where appropriate, orally, graphically, numerically, symbolically.	**Information** into **knowledge** (*analyze facts within an intellectual framework, discover meaning in experience*) Given a novel context, students (working independently as well as collaboratively) can: 1. analyze data, events, styles, themes, and developments to reveal patterns of information and create new ones 2. describe or explain methodologies / epistemologies that a discipline uses to incorporate information into branches of knowledge (e.g., What counts for knowledge? According to whom?). 3. integrate information from multiple sources to develop new knowledge and insights 4. compare new information to existing knowledge to identify consonance and dissonance 5. communicate knowledge in written form and , where appropriate, orally, graphically, numerically, symbolically.	**Information** into **knowledge** (*analyze facts within an intellectual framework, discover meaning in experience*) Given a novel context, students (working independently as well as collaboratively) can: 1. analyze data in its many forms to reveal existing patterns and create new ones 2. describe or explain how information derived from data in its many forms is incorporated into branches of knowledge 3. integrate information from multiple sources to develop new knowledge and insights 4. compare new information to existing knowledge to identify consonance and dissonance 5. communicate knowledge in written form and , where appropriate, orally, graphically, numerically, symbolically.	**Information** into **knowledge** (*analyze facts within an intellectual framework, discover meaning in experience*) Given a novel context, students (working independently as well as collaboratively) can: 1. analyze data to reveal patterns 2. describe or explain how information derived from data is incorporated into scientific knowledge 3. integrate information from multiple sources to develop new knowledge and insights 4. compare new information to existing knowledge to identify consonance and dissonance 5. communicate knowledge in written form and , where appropriate, orally, graphically, numerically, symbolically.

Sample Performance Outcomes – Experience into Information

	Fine Arts	Humanities	Social Science	Natural Science
Tier 1	Instructor should assess the students' ability to apply skills of observation and(or) measurement to obtain useful information from scenarios, projects, works of art, etc. not previously presented in class. Student demonstrates retention of discipline-relevant facts, ideas, and concepts from lecture, readings, discussions, and related performances, exhibitions or events. This mode of transforming **experience** into **information** is rudimentary in nature and should not become the dominant mode.	Instructor should assess the students' ability to apply skills of observation and(or) measurement to obtain useful information from scenarios, experiments, projects, etc. not previously presented in class. Student demonstrates retention of discipline-relevant facts, ideas, and concepts from lecture, readings, discussions, and related events. This mode of transforming **experience** into **information** is rudimentary in nature and should not become the dominant mode.	Instructor should assess the students' ability to apply skills of observation and(or) measurement to obtain useful information from scenarios, experiments, projects, etc. not previously presented in class. Student demonstrates retention of discipline-relevant facts, ideas, and concepts from lecture, readings, discussions, experiments. This mode of transforming **experience** into **information** is rudimentary in nature and should not become the dominant mode.	Instructor should assess the students' ability to apply skills of observation and(or) measurement to obtain useful information from scenarios, experiments, projects, etc. not previously presented in class. Student demonstrates retention of discipline-relevant facts, ideas, and concepts from lecture, readings, discussions, experiments. This mode of transforming **experience** into **information** is rudimentary in nature and should not become the dominant mode.

	Sample Performance Outcomes – Information into Knowledge			
	Fine Arts	**Humanities**	**Social Science**	**Natural Science**
Tier 1	In the fine arts, the transformation of information into knowledge is shown when students can: (1) produce a coherent narrative about a work of art and/or explicate or defend the relevance of the facts chosen and criteria used or (2) when a student utilizes theories in correct explanatory circumstances. This could be demonstrated in the context of individual or group research projects, papers, or oral presentations that involve analysis of works of art. The students should be able to recognize patterns and connections emerging from information and generate knowledge by describing which kinds of patterns and connections are conceptually valid, empirically preferable and/or stylistically important.

Written/oral presentation of findings and conclusions is required.

To a limited degree, multiple-choice tests validly measure a student's transformation of **information** into **knowledge**. However, multiple types of assessment of this transformation should be required. | In the humanities, the transformation of information to knowledge is shown when students can: (1) produce a coherent story of an event from multiple forms of historical data and/or explicate and defend the relevance of facts chosen and the criteria used; (2) utilize theories in the correct explanatory circumstances; or (3) translate from one language to another or from one discipline to another without distorting meaning. This could be demonstrated in the context of individual or group research projects, papers, or oral presentations that involve analysis of data from existing sources. The students should be able to recognize patterns and connections emerging from the information, generates knowledge (independently or collaboratively) by understanding which kinds of patterns and connections are conceptually valid, empirically preferable and/or stylistically important.

Written/oral presentation of findings and conclusions is required.

To a limited degree, multiple-choice tests validly measure a student's transformation of **information** into **knowledge**. However, multiple types of assessment of this transformation should be required. | In the social sciences, the transformation of information into knowledge is shown when students can: (1) graphically, in written form or numerically summarize data to identify patterns (differences, similarities, associations); and (2) describe the meaning of the results based on relevant theory. This could be demonstrated in the context of individual or group research projects, papers, or oral presentations that involve analysis of existing data or data generated by the students to identify and interpret relevant facts, ideas, patterns and/or connections that are conceptually meaningful and important. For example, students might describe patterns or connections emerging from the information, describe the meaning of a graph, table or other shorthand depiction of information, obtain a summary statistic (e.g., mean, standard deviation, correlation coefficient), apply a relevant principle or concept to explain some phenomenon of behavior or society.

Written/oral presentation of findings and conclusions is required.
To a limited degree, multiple-choice tests validly measure a student's transformation of **information** into **knowledge**. However, multiple types of assessment of this transformation should be required. | In the natural sciences, the transformation of information into knowledge is shown when students can: (1) graphically or numerically summarize data to identify patterns (differences, similarities, associations); and (2) describe the meaning of the results based on relevant theory. This could be demonstrated in the context of individual or group research projects, papers, or oral presentations that involve analysis of existing data or data generated by the students to identify and interpret relevant facts, ideas, patterns and/or connections that are conceptually meaningful and important. For example, students might describe the meaning of a graph or table or other shorthand depiction of information, obtain a summary statistic (e.g., mean, standard deviation, correlation coefficient), apply a relevant principle or concept to explain some phenomenon of the natural world.

Written/oral presentation of findings and conclusions is required.

To a limited degree, multiple-choice tests validly measure a student's transformation of **information** into **knowledge**. However, multiple types of assessment of this transformation should be required. |

General Introductions

	Fine Arts / Design	Humanities	Social Science	Natural Science
Tier 2	In Tier 2 fine arts courses, students will acquire discipline-specific knowledge, deepen their understanding of artistic methodologies and apply that knowledge to analyzing the role of the arts in society. Students will develop and defend aesthetic judgments and begin to explore how their actions might impact the arts. All fine arts courses in this tier must also address at least one of the UCC-21 WISER requirements.	In Tier 2 humanities courses, students will acquire discipline-specific knowledge, deepen their understanding of humanistic methodologies, and apply knowledge and methods to social and civic contexts. Students will develop and defend judgments and identify appropriate actions in these contexts. All humanities courses in this tier must also address at least one of the UCC-21 WISER requirements.	In Tier 2 social science courses, students will acquire discipline-specific knowledge, deepen their understanding of social science methodologies, and apply knowledge and methods to social and civic contexts. Students will develop and defend judgments and identify appropriate actions in these contexts. All social science courses in this tier must also address at least one of the UCC-21 WISER requirements.	In Tier 2 natural science courses, students will acquire discipline-specific knowledge, deepen their understanding of natural science methodologies, and apply knowledge and methods to social and civic contexts. Students will develop and defend judgments and identify appropriate actions in these contexts. All natural science courses in this tier must also address at least one of the UCC-21 WISER requirements.

Transformational Goals – Information into Knowledge

	Fine Arts / Design	Humanities	Social Science	Natural Science
Tier 2	**Information** into **knowledge** (*analyze facts within an intellectual framework*, *discover meaning in experience)* Given a novel context, students (working independently as well as collaboratively) can: 1. analyze paintings, sculpture, music, drama, dance and works of design to identify styles, periods, movements, genres, structural elements, or media. 2. describe or explain how changes in style, media, technology, and context (including society) are incorporated into the arts and works of design. 3. integrate and critically evaluate information from multiple sources (e.g., performances, exhibitions of works of art or design, and library/internet) to develop new knowledge and insights. 4. compare new information to existing knowledge to identify consonance and dissonance 5. communicate knowledge in written form and , where appropriate, orally, graphically, numerically, symbolically.	**Information** into **knowledge** (*analyze facts within an intellectual framework, discover meaning in experience)* Given a novel context, students (working independently as well as collaboratively) can: 1. analyze data, events, styles, themes, and developments to reveal patterns of information and create new ones 2. describe or explain methodologies/epistemologies that a discipline uses to incorporate information into branches of knowledge (e.g., What counts for knowledge? According to whom?). 3. integrate and critically evaluate information from multiple sources to develop new knowledge and insights 4. compare new information to existing knowledge to identify consonance and dissonance 5. communicate knowledge in written form and , where appropriate, orally, graphically, numerically, symbolically.	**Information** into **knowledge** (*analyze facts within an intellectual framework*, *discover meaning in experience)* Given a novel context, students (working independently as well as collaboratively) can: 1. analyze data, in its many forms, to reveal existing patterns and create new ones 2. describe or explain methodologies/epistemologies that a discipline uses to incorporate data, in its many forms, into branches of knowledge (e.g., What counts for knowledge? According to whom?) . 3. integrate and critically evaluate information from multiple sources to develop new knowledge and insights 4. compare new information to existing knowledge to identify consonance and dissonance 5. communicate knowledge in written form and , where appropriate, orally, graphically, numerically, symbolically.	**Information** into **knowledge** (*analyze facts within an intellectual framework*, *discover meaning in experience)* Given a novel context, students (working independently as well as collaboratively) can: 1. analyze data to reveal patterns 2. describe or explain how information derived from data is incorporated into scientific knowledge 3. integrate and critically evaluate information from multiple sources to develop new knowledge and insights 4. compare new information to existing knowledge to identify consonance and dissonance 5. communicate knowledge in written form and , where appropriate, orally, graphically, numerically, symbolically.

Transformational Goals – Knowledge into Judgment			

	Fine Arts /Design	Humanities	Social Science	Natural Science
Tier 2	**Knowledge** into **judgment** (*reflect on knowledge gained to make choices and direct what they think, say and do*) Given a novel context, students (working independently as well as collaboratively) can: 1. use multiple sources of information and knowledge to form judgments about works of art or design, and provide their rationale 2. describe the connections that sometimes occur between the arts and social or ethical issues 3. take an inquiring stance toward the world while appreciating the contributions of tradition 4. consider, understand, and explain others' values as well as their own 5. Be able to explain how the students' actions affect the complex, interrelated systems in which the fine arts and works of design are produced, consumed and maintained.	**Knowledge** into **judgment** (*reflect on knowledge gained to make choices and direct what we think, say and do*) Given a novel context, students (working independently as well as collaboratively) can: 1. use multiple sources of information and knowledge to evaluate competing ideas, form judgments, and provide their rationale 2. explain and analyze the ethical implications of using or not using knowledge 3. take an inquiring stance toward the world while appreciating the contributions of tradition 4. consider, understand, and explain others' values as well as their own 5. explain how future actions affect the complex, interrelated systems of society	**Knowledge** into **judgment** (*reflect on knowledge gained to make choices and direct what they think, say and do*) Given a novel context, students (working independently as well as collaboratively) can: 1. use multiple sources of information and knowledge to evaluate competing hypotheses, form judgments, and provide their rationale 2. explain and analyze the ethical implications of using or not using knowledge 3. take an inquiring stance toward the world while appreciating the contributions of tradition 4. consider, understand, and explain others' values as well as their own 5. explain how future actions affect the complex, interrelated systems of society	**Knowledge** into **judgment** (*reflect on knowledge gained to make choices and direct what they think, say and do*) Given a novel context, students (working independently as well as collaboratively) can: 1. use multiple sources of information and knowledge to evaluate competing hypotheses, form judgments, and provide their rationale 2. explain and analyze the ethical implications of using or not using knowledge 3. take an inquiring stance toward the world while appreciating the contributions of tradition 4. consider, understand, and explain others' values as well as their own 5. explain how future actions affect the complex, interrelated systems of society

	Sample Performance Outcomes – Information into Knowledge			
	Fine Arts / Design	**Humanities**	**Social Science**	**Natural Science**
Tier 2	In the fine arts and design, the transformation of information into knowledge is shown when students can: (1) produce a coherent narrative about a work of art or design, and/or explicate or defend the relevance of the facts chosen and criteria used or (2) utilize theories in correct explanatory circumstances. This could be demonstrated in the context of individual or group research projects, papers, or oral presentations that involve analysis of works of art or design. The students should be able to recognize patterns and connections emerging from information and generate knowledge by describing which kinds of patterns and connections are conceptually valid, empirically preferable and/or stylistically important. Written/oral presentation of findings and conclusions is required.	In the humanities, the transformation of information to knowledge is shown when students can: (1) produce a coherent story of an event from multiple forms of historical data and/or explicate and defend the relevance of facts chosen and the criteria used; (2) utilize theories in the correct explanatory circumstances; or (3) translate from one language to another or from one discipline to another without distorting meaning. This could be demonstrated in the context of individual or group research projects, papers, or oral presentations that involve analysis of data from existing sources. The students should be able to recognize patterns and connections emerging from the information, generates knowledge (independently or collaboratively) by understanding which kinds of patterns and connections are conceptually valid, empirically preferable and/or stylistically important. Written/oral presentation of findings and conclusions is required.	In the social sciences, the transformation of information into knowledge is shown when students can: (1) graphically or numerically summarize data to identify patterns (differences, similarities, associations); and (2) describe the meaning of the results based on relevant theory. This could be demonstrated in the context of individual or group research projects, papers, or oral presentations that involve analysis of existing data or data generated by the students to identify and interpret relevant facts, ideas, patterns and/or connections that are conceptually meaningful and important. For example, students might describe patterns or connections emerging from the information, describe the meaning of a graph, table or other shorthand depiction of information, obtain a summary statistic (e.g., mean, standard deviation, correlation coefficient), apply a relevant principle or concept to explain some phenomenon of behavior or society. Written/oral presentation of findings and conclusions is required.	In the natural sciences, the transformation of information into knowledge is shown when students can: (1) graphically or numerically summarize data to identify patterns (differences, similarities, associations); and (2) describe the meaning of the results based on relevant theory. This could be demonstrated in the context of individual or group research projects, papers, or oral presentations that involve analysis of existing data or data generated by the students to identify and interpret relevant facts, ideas, patterns and/or connections that are conceptually meaningful and important. For example, students might describe the meaning of a graph, table or other shorthand depiction of information, obtain a summary statistic (e.g., mean, standard deviation, correlation coefficient), or apply a relevant principle or concept to explain some phenomenon of the natural world. Written/oral presentation of findings and conclusions is required.
	To a limited degree, multiple-choice tests validly measure a student's transformation of **information** into **knowledge**. However, multiple types of assessment of this transformation should be required.	To a limited degree, multiple-choice tests validly measure a student's transformation of **information** into **knowledge**. However, multiple types of assessment of this transformation should be required.	To a limited degree, multiple-choice tests validly measure a student's transformation of **information** into **knowledge**. However, multiple types of assessment of this transformation should be required.	To a limited degree, multiple-choice tests validly measure a student's transformation of **information** into **knowledge**. However, multiple types of assessment of this transformation should be required.

	Sample Performance Outcomes – Knowledge into Judgment			
	Fine Arts / Design	**Humanities**	**Social Science**	**Natural Science**
Tier 2	Projects or experiences (critical papers, in-class debates or discussions) that require students to critique their own understandings, reflect on their assumptions, trace consequences, draw conclusions, defend their reasoning etc., and require students to make judgments based on the knowledge they have gained.

For example, students could: (1) discuss a work of art or design and describe how the work is a reflection of the society that produced it; (2) develop an informed and well-reasoned argument about the social or moral implication of a work of art or design; (3) lead a discussion about works of art or design, or musical, theatrical, or dance performances using appropriate vocabulary; or (4) create a work or art or design or a performance that demonstrates technical and aesthetic understanding of the discipline. | Projects or experiences (critical papers, in-class debates or discussions) that require students to critique their own understandings, reflect on their assumptions, trace consequences, draw conclusions, defend their reasoning, and make judgments based on the knowledge they have gained. This transformation might also occur when students reflect on contemporary trends or diverse cultures and make a judgment as to the value of various points of view.

For example, students could produce papers, oral presentations, or other artifacts that provide a critical, analytical or otherwise evaluative summary of knowledge from the disciplinary literature. | Projects or experiences (critical papers, case studies, in-class debates or discussions) that require students to critique knowledge or assumptions, reflect on their own assumptions, make recommendations, and defend their judgments (e.g., evaluate the validity of information based on diverse perspectives, describe the social and environmental consequences of various patterns of behavior or courses of action, and defend their recommended course of action based on acquired knowledge). This transformation might also occur when students reflect on contemporary trends or diverse cultures and make a judgment/argument based on various points of view

For example, students could: (1) produce a paper, presentation, or other artifact for a case study with analytic conclusions or recommendations or (2) write an empirical research paper that includes original data analysis and evaluative conclusions and judges the knowledge presented in terms of both statistical and practical significance (including the student's personal experience). | Projects or experiences (case studies, in-class debates or discussions) that require students to critique knowledge or assumptions, reflect on their own assumptions, make recommendations, and defend their judgments (e.g., evaluate the validity of information based on rules of evidence common to all science disciplines, describe the social and/or environmental consequences of various potential courses of action, and defend their recommendations for action based on acquired knowledge).

For example, students could: (1) produce a paper, presentation, or other artifact for a case study with analytic conclusions or recommendations or (2) write an empirical research paper that includes original data analysis and evaluative conclusions and judges the knowledge presented in terms of both statistical and practical significance – practical significance being how applicable the result is to addressing real-world problems or testing theory. |
| | To a limited degree, open-ended exam questions validly measure a student's transformation of **knowledge** into **judgment**. However, multiple types of assessment of this transformation should be required. | To a limited degree, open-ended exam questions validly measure a student's transformation of **knowledge** into **judgment**. However, multiple types of assessment of this transformation should be required. | To a limited degree, open-ended exam questions validly measure a student's transformation of **knowledge** into **judgment**. However, multiple types of assessment of this transformation should be required. | To a limited degree, open-ended exam questions validly measure a student's transformation of **knowledge** into **judgment**. However, multiple types of assessment of this transformation should be required. |

Tier 3

The primary distinguishing feature of all Tier 3 courses, immersion learning experiences, or other experiential learning experiences is that students should have opportunities to demonstrate the final transformational goal of translating Judgment into Action. The nature of appropriate actions varies among disciplines even within a single domain, and most Tier 3 experiences will likely be in the context of courses or experiences within the student's major discipline. Tier 3 experiences may also be multidisciplinary and include aspects of multiple domains. Hence, it is not practical to delineate a single set of transformational goals and example student learning outcomes for each the four domains that have been used to structure the Tier 1 and Tier 2 components of UCC-21. Rather, the UCC sub-committee should use the description of Tier 3 courses or experiences described in the UCC-21 framework as a general guide when they evaluate proposals from departments or other university entities. Such proposals should include: (1) a description of the methodologies or epistemologies that guide translation of judgment to action within the specific discipline and (2) a description of how the proposed Tier 3 course or experience will provide opportunities for students to demonstrate the Judgment to Action transformational goal within that disciplinary context. Departments should be given broad latitude to define the norms used by their discipline to guide translation of judgment to action.