Course Planning Worksheet updated 11-27-2013

Student Learning Outcomes	**Program Learning Outcomes**	**PLO no(s).**	**Institutional Learning Outcomes**	**ILO no(s).**
By the end of this class a student will:	*By completing this major a student will:*		*By graduation a student will:*	
Have knowledge of:	Have knowledge of:		Have knowledge of:	
Have ability to:	Have ability to:		Have ability to:	
Have a disposition to:	Have a disposition to:		Have a disposition to:	

Please note:

1. Not all course outcomes will be aligned with ILOs or PLOs
2. Some course outcomes are only aligned to ILOs
3. Some course outcomes are only aligned to PLOs (if course is part of Major curriculum)
4. Please identify Signature Assignments that help measure either ILOs or PLOs

Definitions:

Knowledge: Remembering previously learned material

Examples:

Educational Psychology: Give the definition of punishment.
Mathematics: State the formula for the area of a circle.
English / Language Arts: Recite a poem.

Skills/Ability: 1. the ability, coming from one's knowledge, practice, aptitude, etc., to do something well. 2.competent excellence in performance; expertness; dexterity: The dancers performed with skill.

Disposition: Professional dispositions are defined as the values, commitments, and professional ethics that influence behaviors toward peers, families, colleagues, and communities and affect learning, motivation, and development as well as the one's own professional growth. Dispositions are guided by beliefs and attitudes

related to values such as caring, fairness, honesty, responsibility, and social justice. For example, they might include a belief that all students can learn, a vision of high and challenging standards, or a commitment to a safe and supportive learning environment (NCATE, 2002).

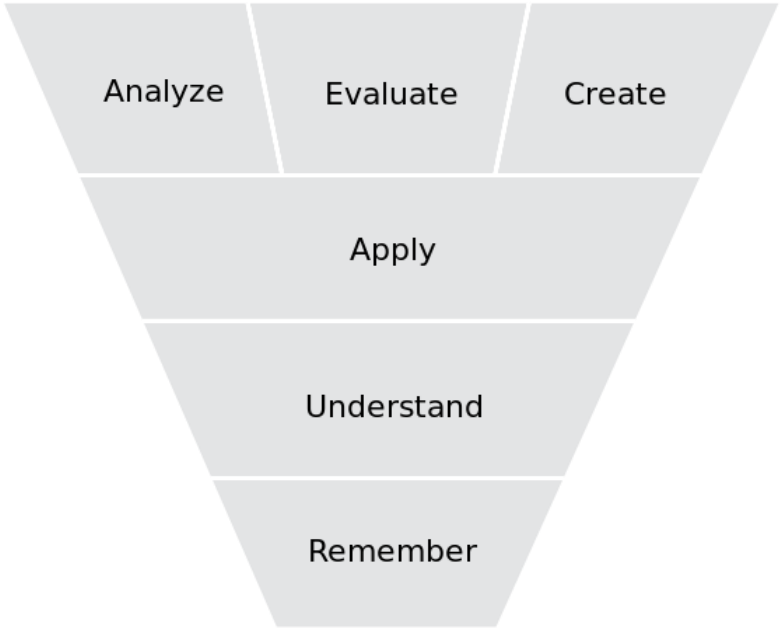
Sample Alignment:

Student Learning Outcomes	Program Learning Outcomes	**PLO no(s).**	Institutional Learning Outcomes	**ILO no(s).**
By the end of this class a student will:	*By completing this major a student will:*		*By graduation a student will:*	
Have knowledge of:	Have knowledge of:		Have knowledge of:	
Gain an in-depth knowledge of the historical and cultural background, people, events, and doctrines of the Gospels through personal study and class instruction [measured with tests] in order to help teach the scriptures to others in coming years.	Ancient and modern setting of the scriptures and LDS scripture, doctrine, and history Deeper testimony of LDS scripture, doctrine and history		Both breadth of general knowledge and discipline- specific knowledge	
Have ability to:	Have ability to:		Have ability to:	
study the scriptures thoughtfully and insightfully for personal insights and strength, practicing these skills through close reading, note-taking, journal-writing, and class discussion. personally apply and teach the gospel as found the Gospels through close reading, journal-writing, class discussion, and the application paper.	Analyze and interpret LDS scripture, doctrine & history [Inquiry, Analysis] Apply knowledge and understanding of scripture, doctrine and history to solve problems and help others [Analysis, Communication]		Inquire, Analyze, Communicate	1,2,3
Have a disposition to:	Have a disposition to:		Have a disposition to:	
Exercise faith in Christ Repent and follow him [living a life of integrity and service]	Seek the Holy Ghost as an aid in studying pondering, and living the doctrines of the Church [with integrity and service as disciples of Christ]		Act with integrity, stewardship, and service	4,5,6

Activities at Various Cognitive Levels of Learning (http://enpub.fulton.asu.edu/mcneill/blooms.htm)

Bloom's taxonomy of learning objectives is used to define how well a skill or competency is learned or mastered. A fuller description of Bloom's taxonomy is given in the following pages but a brief summary of the activities associated with each level is given below.

1. At Knowledge Level of Learning a student can define terms
2. At Comprehension Level of Learning a student can work assigned problems and can example what they did
3. At Application Level of Learning a student recognizes what methods to used and then used the methods to solve problems
4. At Analysis Level of Learning a student can explain why the solution process works
5. At Synthesis Level of Learning a student can combine the part of a process in new and useful ways
6. At Evaluation Level of Learning a student can create a variety of ways to solve the problem and then, based on established criteria, select the solution method best suited for the problem.



The Six Major Levels of Bloom's Taxonomy of the Cognitive Domain

(with representative behaviors and sample outcomes) (National Teaching and Learning Forum website;

I. **Knowledge.** Remembering information

Define, identify, label, state, list, match

- Identify the standard peripheral components of a computer
- Write the equation for the Ideal Gas Law
- Identify the five major prophets of the Old Testament

II. **Comprehension.** Explaining the meaning of information

Describe, generalize, paraphrase, summarize, estimate

- In one sentence explain the main idea of a written passage
- Describe in prose what is shown in graph form
- Translate the following passage from *The Iliad* into English

III. **Application.** Using abstractions in concrete situations

Determine, chart, implement, prepare, solve, use, develop

- Using principles of operant conditioning, train a rat to press a bar
- Apply shading to produce depth in drawing
- Derive a kinetic model from experimental data

IV. **Analysis.** Breaking down a whole into component parts

Points out, differentiate, distinguish, discriminate, compare

- Compare and contrast the major assumptions underlying psychoanalytic and humanistic approaches to psychology
- Identify supporting evidence to support the interpretation of a literary passage
- Analyze an oscillator circuit and determine the frequency of oscillation

V. **Synthesis.** Putting parts together to form a new and integrated whole

Create, design, plan, organize, generate, write

- Write a logically organized essay in favor of euthanasia
- Develop an individualized nutrition program for a diabetic patient

- Compose a choral work using four-part harmony for men's and women's voices

VI. **Evaluation.** Making judgments about the merits of ideas, materials, or phenomena

Appraise, critique, judge, weigh, evaluate, select

- Assess the appropriateness of an author's conclusions based on the evidence given
- Select the best proposal for a proposed water treatment plant
- Evaluate a work of art using appropriate terminology

KNOWLEDGE (INFORMATION)

1. How do **I know** I have reached this level?

   I can recall information about the *subject*, *topic*, *competency*, or *competency area*; I can *recall* the appropriate material at the appropriate time. I have been *exposed* to and have *received* the information about the subject; thus, I can respond to questions, perform relevant tasks, etc.

2. What do **I do** at this level?

   I read material, listen to lectures, watch videos, take notes; I pass 'True/False', 'Yes/No', 'multiple choice', or 'fill in the blank' tests which demonstrate my *general knowledge* of the *subject*. I learn the vocabulary or terminology as well as the conventions or rules associated with the *subject*.

3. How will the **teacher know** I am at this level?

   The teacher will provide *verbal* or *written* tests on the *subject* that can be answered by simply *recalling* the material I have learned about this subject.

4. What does the **teacher do** at this level?

   The teacher directs, tells, shows, identifies, examines the subject or competency area *at this level*.

5. What are typical ways **I** can demonstrate my knowledge?
   a. Answer 'True/False', 'Yes/No', 'fill in the blank', or 'multiple choice' questions correctly.
   b. Define technical terms associated with the subject by stating their attributes, properties, or relations.
   c. Recall the major facts about the subject.
   d. Name the classes, sets, divisions, or arrangements that are fundamental to the subject.

e. List the criteria used to evaluate facts, data, principles, or ideas associated with the subject.
f. List the relevant principles and generalizations associated with the subject.
g. List the characteristic methods of approaching and presenting ideas associated with the subject (e.g., list the conventions or rules associated with the subject).
h. Describe the general problem solving method (i.e., the techniques and procedures) or the method(s) of inquiry commonly used in the subject area.

6. What are typical ***work products***?
   a. Answers to Knowledge level quizzes ('True/False', 'Yes/No', 'fill in the blank', or 'multiple choice').
   b. Lists of definitions or relevant principles and generalizations associated with the subject.
   c. Modifications of example problems presented in the textbook; for example, modest changes in numerical values or units; i.e., solutions to problems which were solved using 'pattern recognition'.
7. What are descriptive **'process' verbs**?

define	label	listen	list	memorize	name
read	recall	record	relate	repeat	view

COMPREHENSION (UNDERSTANDING)

1. How do **I know** I have reached this level?

   I comprehend or understand the *subject, topic, competency,* or *competency area;* I use ideas associated with the subject without relating them to other ideas or subjects. I may not yet completely understand the subject. When others are discussing this subject, I can follow and understand the discussion. This level requires **Knowledge**.

2. What do **I do** at this level?

   I successfully solve textbook problems using appropriate techniques and procedures based on (**1**) where the problem is located in the book or (**2**) the problem statement. I translate ideas into my own words (translation from one level of abstraction to another). I translate graphical or symbolic information (e.g., tables, diagrams, graphs, mathematical formulas, etc.) into verbal forms, and vice versa. I interpret or summarize communications (oral/written/graphical). I can use the problem solution to determine effects, trends, implications, corollaries, etc.

3. How will the **teacher know** I am at this level?

   The teacher will ask questions that can be answered by restating or reorganizing material in a literal manner; i.e., by clearly stating facts or the principle meaning of the material in your own words. The teacher will also give tests based on the textbook problems that were (**1**) assigned as homework **or** (**2**) used as examples in the textbook or in class.

4. What does the **teacher do** at this level?

   The teacher demonstrates, solves problems, listens, questions, compares, contrasts, and examines the information and your knowledge of the subject.

5. What are typical ways **I** can demonstrate, on my own, my comprehension and understanding?
   a. Read textbook problems, understand what is required, and successfully solve the problems.
   b. Clearly document the process used to solve the problem.
   c. Clearly describe the solution to the problem.
   d. Draw conclusions based on the solution to the problem.
   e. Compare/contrast two different textbook problems (i.e., what elements are the same? what elements are different?).
   f. Restate an idea, theory, or principle in your own words.
6. What are typical **work products**?
   a. Answers to Comprehension level quizzes and exams ('multiple choice' or textbook problems).
   b. Solutions to textbook problems which include (a) a summary of the learning objectives associated with the problem, (b) the problem statement in the form of a clearly labeled sketch, specifications, and what is required, (c) a description of the general solution method (techniques and procedures) used to solve the problem, and (d) a discussion of the solution.
7. What are descriptive **'process' verbs**?

describe	discuss	explain	express	identify	locate
recognize	report	restate	review	solve	tell

APPLICATION (INDEPENDENT PROBLEM SOLVING)

1. How do I know I have reached this level?

   I can recognize the need to use an idea, concept, principle, theory, or general solution methods (techniques and procedures) **without being told** and **without any specific or immediate context or cues.** For example, I do not need to locate a similar example in a textbook, nor do I need to know that an assignment is for a particular course in order to recognize the need to use a particular idea, etc. I know and comprehend these ideas, concepts, principles, theories, or general solution methods (techniques and procedures and I can apply them to new situations. I also have the ability to recognize when a certain task or project is beyond my current competency. This level requires **Knowledge** and **Comprehension**.

2. What do I do at this level?

I apply ideas, concepts, principles, theories, or general solution methods (techniques and procedures) that I learned at the Knowledge and Comprehension level to new situations. I solve problems in which the solution method is not immediately evident or obvious. I solve these problems independently and make use of other techniques and procedures as well. This requires not only knowing and comprehending these ideas, concepts, principles, theories, and general solution methods (techniques and procedures) but deep thinking about their usefulness and how they can be used to solve new problems that I identify or define.

3. How will the teacher know I am at this level?

   The teacher will review my work products and confirm that I am solving problems independently, in new situations, and without prompting by the teacher. The teacher will be able to pose general questions such as *"How much protection from the sun is enough?"* and I will know how to answer the question by defining and solving a problem.

4. What does the **teacher do** at this level?

   The teacher assigns problems that do not explicitly (or as best possible implicitly) imply the use of an expected solution methodology. The teacher may develop problems and assignments in conjunction with teachers in another related subject areas. The teacher will probe for use of course material outside of the course.

5. What are the typical ways **I** can demonstrate, on my own, my Application of Knowledge and Comprehension?
   a. Solve problems which require that I recognize and apply the appropriate ideas, concepts, principles, theories, general solution methods (techniques and procedures), etc. without being told and without any specific or immediate context or cues.
   b. Apply the laws of mathematics, chemistry, and physics, as well as engineering, business or design concepts, etc. to practical problems or situations.
   c. Solve problems associated with design/build projects.
6. What are typical ***work products***?

   Application level work products are very similar to Comprehension level work products; however, documentation will be included which demonstrates that you recognized the need to use ideas, concepts, principles, theories, general solution methods (techniques and procedures), etc. in a new situation.

7. What are descriptive **'process' verbs**?

apply	demonstrate	employ	illustrate	interpret
operate	practice	recognize	solve	use

ANALYSIS (LOGICAL ORDER, COMPONENTS)

1. How do I know I have reached this level?

   I can explain why. I can methodically examine ideas, concepts, principles, theories, general solution methods (techniques and procedures), reports, etc. and separate these into their component parts or basic elements. I can use the results of this examination to clarify the organization of the whole or to gain a global view. This level requires Knowledge and Comprehension Levels of Learning; Application is not required.

2. What do I do at this level?

   I demonstrate that I can analyze results by breaking ideas, concepts, principles, theories, general solution methods (techniques and procedures), reports, etc. into their component parts. I explain the logical interconnections of the parts. I can also develop detailed cause and effect sequences.

3. How will the teacher know I am at this level?

   When asked, I am able to explain why I did what I did. I include a discussion with my work that explains why my solution method worked.

4. What does the teacher do at this level?

   The teacher probes, guides, observes, and acts as a resource or facilitator.

5. What are typical questions I can ask myself that will demonstrate my Analysis Level of Learning?
   a. What are the causal relationships between the parts and how the whole functions?
   b. Can I explain, from the parts, why the whole does or does not work?
   c. Are the conclusions supported by sound reasoning?
   d. Does the evidence provided support the hypothesis or the conclusion?
   e. Are the conclusions supported by facts, opinions, or an analysis of the results?
   f. What are the unstated assumptions, if any?
6. What are typical work products?
   a. Answers to Analysis level exams (problems, multiple choice, and essays).
   b. Analysis level work products are very similar to Comprehension level work products; however, documentation will include a more extensive discussion of the work. The content, amount, and depth of the presentation is what distinguishes Analysis level work products from Comprehension level work products; e.g., see items a. through f. above.
7. What are descriptive ‘process’ verbs?

analyze	appraise	break apart	break down	calculate
compare	contrast	debate	diagram	differentiate

examine experiment explain inspect inventory

question relate solve

SYNTHESIS (CREATE)

1. How do I know I have reached this level?

   I have the ability to assemble parts and elements into a unified organization or whole that requires original or creative thinking. I recognize new problems and develop new tools to solve them. I create my own plans, models, hypotheses, etc. for constructing solutions to problems. This Level of Learning requires Knowledge, Comprehension, Application and Analysis Levels of Learning.

2. What do I do at this level?

   I generate ideas and use them to create a physical object, a process, a design method, a written or oral communication, or even a set of abstract relations (e.g., mathematical models). I produce written or oral reports that have the desired effect (e.g., information acquisition, acceptance of a point of view, continued support, etc.) on the reader or listener. I generate project plans. I propose designs. I formulate hypotheses based on the analysis of relevant or pertinent factors. I am able to generalize from a set of axioms or principles.

3. How will the teacher know I am at this level?

   I demonstrate that I can combine ideas into a statement, a plan, a product, etc. that was previously unknown to me; e.g., I develop a program that includes the best parts of each of these ideas.

4. What does the teacher do as this level?

   The teacher reflects, extends, analyzes, and evaluates.

5. What are the typical questions I can ask myself that will demonstrate my Synthesis Level of Learning?
   a. Can I create a project plan?
   b. Can I develop a model?
   c. Can I propose a design?
6. What are typical work products?
   a. Answers to Synthesis level exams (problems, multiple choice, and essays).
   b. Synthesis level work products are very similar to Comprehension level work products; however, documentation will include a more extensive discussion of the work. The content, amount, and depth of the presentation is what distinguishes Synthesis level work products from Comprehension level work products; e.g., see items a. through c. above.

7. What are descriptive ‘process’ verbs?

Arrange	assemble	collect	compose	construct
create	design	formulate	manage	organize
plan	prepare	propose	set up	write

EVALUATION (APPRECIATION)

1. How do I know I have reached this level?

   I have the ability to judge and appreciate the value of ideas, concepts, principles, theories, or general solution methods (techniques and procedures) using appropriate criteria. This level requires Knowledge, Comprehension, Application, Analysis, and Synthesis Levels of Learning.

2. What do I do at this level?

   I make value judgments based on certain criteria such as usefulness and effectiveness. Based on information gained through application, analysis, and synthesis, I can rationally select a process, a method, a model, a design, etc. from among a set of possible processes, methods, models, designs, etc. I evaluate competing plans of action before actually starting the work. I evaluate work products based on internal standards of consistency, logical accuracy, and the absence of internal flaws; e.g., I can certify that the feasibility of a design has been demonstrated in a report. I evaluate work products based on external standards of efficiency, cost, or utility to meet particular goals or objectives; e.g., I can certify that the quality of the design has been demonstrated in a report.

3. How will the teacher know I am at this level?

   I demonstrate that I can select, judge, or appreciate a process, a method, a model, a design, etc. using appropriate criteria or standards.

4. What does the teacher do at this level?

   The teacher clarifies, accepts, harmonizes, aligns, and guides.

5. What are typical statements and questions I can answer to that will demonstrate or show my appreciation/evaluation?
   a. I can evaluate an idea in terms of ...
   b. For what reasons do I favor...?
   c. Which policy do I think would result in the greatest good for the greatest number?
   d. Which of these models or modeling approaches is best for my current needs?

    e. How does this report demonstrate that the design is feasible?
    f. How does this report demonstrate the quality of the design?
6. What are typical work products?
    a. Answers to Evaluation level exams (problems, multiple choice, and essays).
    b. Evaluation level work products are very similar to Comprehension level work products; however, documentation will include a more extensive discussion of the work. The content, amount, and depth of the presentation is what distinguishes Evaluation level work products from Comprehension level work products; e.g., see items a through f above.
7. What are descriptive 'process' verbs?

appraise	assess	choose	compare	estimate (quality)
evaluate	judge	predict (quality)	rate value	select