This course supports the assessments for CLC1. The course covers 6 competencies and represents 3 competency units.

**Introduction**

**Overview**
Welcome to the Reasoning and Problem Solving domain at Western Governors University. The goal of this domain is to encourage techniques that increase knowledge and application of a systematic process for exploring issues that take you beyond an unexamined point of view. As you come to understand aspects of critical thinking, you will find yourself consciously monitoring your thinking in order to improve how you think. As you become a more self-aware thinker, you will learn to balance a healthy skepticism with an intellectual humility that discourages premature closure on the issues you seek to understand. The concepts contained here will help you more fully benefit from the knowledge you will obtain as a student at WGU and in your private and professional life.

If at any time you require additional assistance or have any questions while working on this course of study, please feel free to contact the course instructors for this area. Their contact information is available by clicking on the "About the Course Instructors" link on the right-hand side of the page.

Watch the following video for an introduction to this course:

*Note: To download this video, right-click the following link and choose "Save as...": [download video]*

**Competencies**
This course provides guidance to help you demonstrate the following 6 competencies:

- **Competency 106.1.1: Problem Identification and Clarification**
  The graduate analyzes open-ended problems by learning about the problem and evaluating the accuracy and relevance of different perspectives on the problem.

- **Competency 106.1.2: Planning and Information Gathering**
  The graduate evaluates different sources representing a range of perspectives on a problem in order to weigh the implications and consequences of different solutions to the problem.

- **Competency 106.1.3: Assumptions and Values**
  The graduate identifies internal and external biases and assumptions related to a problem and then evaluates the influence and validity of these biases and assumptions.

- **Competency 106.1.4: Analysis and Interpretation of Information/Data**
  The graduate synthesizes information to understand a problem's complexities and potential solutions, and then evaluates the reasoning and evidence in support of these different solutions.

- **Competency 106.1.5: Reaching Well-Founded Conclusions**
The graduate logically brings together information to arrive at a viable solution to a problem, and then clearly and accurately communicates the results.

- Competency 106.1.6: Identifying the Role of Critical Thinking in the Disciplines and Professions
  The graduate recognizes the value of critical thinking in identifying and understanding the underlying structures of disciplines and professions.

Course Instructor Assistance
As you prepare to successfully demonstrate competency in this subject, remember that course instructors stand ready to help you reach your educational goals. As subject matter experts, mentors enjoy and take pride in helping students become reflective learners, problem solvers, and critical thinkers. Course instructors are excited to hear from you and eager to work with you.

Successful students report that working with a course instructor is the key to their success. Course instructors are able to share tips on approaches, tools, and skills that can help you apply the content you’re studying. They also provide guidance in assessment preparation strategies and troubleshoot areas of deficiency. Even if things don’t work out on your first try, course instructors act as a support system to guide you through the revision process. You should expect to work with course instructors for the duration of your coursework, so you are welcome to contact them as soon as you begin. Course instructors are fully committed to your success!

Preparing for Success
The information in this section is provided to detail the resources available for you to use as you complete this course.

Learning Resources
The learning resources listed in this section are required to complete the activities in this course. For many resources, WGU has provided automatic access through the course. However, you may need to manually enroll in or independently acquire other resources. Read the full instructions provided to ensure that you have access to all of your resources in a timely manner.

Automatically Enrolled Learning Resources
You will be automatically enrolled at the activity level for the following learning resources. Simply click on the links provided in the activities to access the learning materials.

VitalSource E-Texts
The following textbooks are available to you as e-texts within this course. You will be directly linked to the specific readings required within the activities that follow.


Note: These e-texts are available to you as part of your program tuition and fees, but you may purchase hard copies at your own expense through a retailer of your choice. If you choose to do so, please use the ISBN listed to ensure that you receive the correct edition.
MindEdge
As you work through this course, you will find links to the learning resource in the activities for each content area. As you come upon these activities, you simply need to click on the link provided and you will be taken to the MindEdge Learning Resource Modules.

Take the Student Self-Assessment

Before you begin your preparations for the assessment, you should complete the Student Self-Assessment (SSA) for this area. You can access the SSA by following these instructions:

- Click on this link: [Student Self Assessment](#)
- Download the Student Self Assessment to your computer
- Follow the directions on the Student Self Assessment rating your knowledge of the various topic areas

This Student Self-Assessment can be taken on your computer at home or any other convenient location. Do not use your notes or texts when completing the Student Self-Assessment. This will help indicate areas you will need to study before taking the pre-assessment.

Depending on how you scored yourself on the self-assessment, you may want to schedule the pre-assessment or spend some time reviewing the LRs. A decision about which path to take should be done in consultation with your mentor of record.

Pacing Guide
The pacing guide suggests a weekly structure to pace your completion of learning activities. It is provided as a suggestion and does not represent a mandatory schedule. Follow the pacing guide carefully to complete the course in the suggested timeframe.

- [Pacing Guide: Reasoning and Problem Solving](#)

Note: This pacing guide does not replace the course. Please continue to refer to the course for a comprehensive list of the resources and activities.

Additional Preparations
Whiteboards

Whiteboards may be used to assist you as you complete the assessment for this course. Paper, or other note taking resources, may not be used during the assessment. For math assessments only, scratch paper can be used only when taking the assessment at an on-site testing center. Please view the following video for more information on how to use a whiteboard:

Note: To download this video, right-click the following link and choose “Save as...”: [download video](#).

Critical Thinking

The word *critical* in the term *critical thinking* might suggest that critical thinking involves pointing out what is wrong with something. On the contrary, the word *critical* there refers to
“criterion-based thinking that meets high standards for reasoning and judgment.” The specific criteria employed in critical thinking are referred to as the elements and standards of thought. Critical thinkers use these tools to assess and evaluate both their own thinking and the thinking of others. Generally, the purpose of critical thinking is to help the thinker make appropriate decisions or to identify possible solutions to a problem. The ultimate goal is to improve the way you think.

**What Is Critical Thinking?**

Becoming a better thinker will give you more control over your life by helping you navigate adversity and reach your goals in all aspects of your life. This requires conscious effort and continual monitoring. Unfortunately, many people have little awareness of how they think. If you are not thinking clearly in an increasingly complex world, you become vulnerable to everyone else. Critical thinking invites you to assess your own thought processes so you can identify and overcome your weaknesses. Thinking critically helps you evaluate the thinking of others, but its primary benefit is to help you become a more effective thinker.

Use the following questions to orient yourself as you study this topic:

- How skilled is your current thinking?
- Can you respond effectively to a rapidly changing world without improving the way you think?
- How can you overcome the unique obstacles to effective thinking in your personal and professional life?

This topic addresses the following competencies:

- Competency 106.1.1: Problem Identification and Clarification
  The graduate analyzes open-ended problems by learning about the problem and evaluating the accuracy and relevance of different perspectives on the problem.

"What is Critical Thinking?" Activity

Go to MindEdge and complete the following module:

- Module 1: What Is Critical Thinking?

**Elements and Standards**

The elements of reasoning, also called “elements of thought” or the “parts of thinking,” help us understand our thinking. They are the essential elements that are present whenever reasoning is taking place, regardless of the quality of our reasoning. The elements are nonlinear and function interdependently like the parts of the human body—one cannot function independently of the others. Recognizing the elements is the first step to thinking critically. The second step is to analyze the elements of reasoning in our own thinking and in that of others. This is done by applying the intellectual standards of thinking to each element of reasoning. Critical thinkers routinely ask questions that apply intellectual standards to thinking in order to assess the quality of thinking.

Use the following questions to orient yourself as you study this topic:
What mental processes do you use to make sense of something you do not at first understand?
What exactly do you do every time you make a decision?
How aware are you of the role of reasoning in your life?
What thinking is reflected in the way you behave?

This topic addresses the following competencies:

- Competency 106.1.1: Problem Identification and Clarification
  The graduate analyzes open-ended problems by learning about the problem and evaluating the accuracy and relevance of different perspectives on the problem.

**Elements and Standards Activity**

Go to MindEdge and complete the following module:

- Module 2: The Elements and Standards of Critical Thinking

**Systematic Problem Solving**

Whenever you attempt to reason something through, there is an initial consideration that helps you focus on the problem to be solved or your specific question at issue (also called a question of judgment). This question at issue requires reasoning and judgment, as opposed to factual information alone, and is never simply a matter of preference. It also means understanding that thoughts, feelings, and desires are interdependent, and any change in one will bring about changes in the other two. This process may be applied to either making decisions or attempting to solve problems.

By developing the ability to engage in systematic problem solving, you will learn to raise vital concerns, identify problems, and articulate them clearly and precisely. You will also be able to gather and assess relevant information, determine well-supported conclusions and solutions, and communicate effectively with others in figuring out appropriate responses to complex issues.

Use the following questions to orient yourself as you study this topic:

- How do you go about resolving a problem in your personal life or in the workplace?
- How do you keep an open mind when exploring alternative perspectives on an issue?
- Are you able to see flaws in your own thinking, as well as strengths?
- Are you able to see strengths in the thinking of others, especially when it conflicts with your own?
- Do you value well-founded judgment in determining the true worth of an idea or do you believe winning is always more important?

This topic addresses the following competencies:

- Competency 106.1.2: Planning and Information Gathering
  The graduate evaluates different sources representing a range of perspectives on a
problem in order to weigh the implications and consequences of different solutions to the problem.

**Systematic Problem Solving**

Go to MindEdge and complete the following module:

- Module 3: Systematic Problem Solving

**Assumptions, Biases, and Fallacies**

Biases and assumptions are different but interrelated aspects of a person’s viewpoint and thinking. Bias literally means to demonstrate a particular partiality or prejudice for or against something. An assumption is something that is taken for granted. The two are connected in that a particular bias can bring someone to make certain assumptions. For example, when Europeans arrived in the Americas, they thought of Native Americans as savages. By thinking of the first Americans as savages, they assumed their inhumane treatment of them was justified. At the same time, by assuming they represented a higher civilization, Europeans believed they were improving the lot of the “savages” by imposing on them their way of life. Most Native Americans thought otherwise.

You should distinguish between two kinds of bias: neutral and negative. In the neutral sense, you may notice some things (rather than other things) and think in one direction rather than another, because people think within a point of view. This is unavoidable. In the negative sense, bias might blind you to weaknesses in the arguments that support your viewpoint, or it could prevent you from recognizing the strengths and insights of an argument that opposes your own viewpoint.

A fallacy is an error in reasoning. It is also a flaw or defect in an argument. Fallacies are meant to deceive or mislead the reader. Being able to name a fallacy is not as important as understanding how the human mind uses unsound arguments and intellectual tricks to further its ends.

Use the following questions to orient yourself as you study this topic:

- Are you aware when your thinking is flawed?
- Are you able to identify inconsistencies in the thinking of others?
- Can you diplomatically discuss and correct flaws in reasoning wherever you find them?

This topic addresses the following competencies:

- **Competency 106.1.3: Assumptions and Values**
  The graduate identifies internal and external biases and assumptions related to a problem and then evaluates the influence and validity of these biases and assumptions.

**Assumptions, Biases, and Fallacies Activity**

Go to MindEdge and complete the following module:
Evidence

Information - one of the elements of reasoning - includes evidence. Data or evidence should not be confused with the interpretation or conclusion derived from the data. Evidence is the set of initial findings (i.e., the raw data) by which probability is validated. The most common and credible forms of evidence are research findings (from statistical and/or descriptive research) and expert testimony (based on professional familiarity with the research and thinking of a particular discipline or profession).

Other forms of evidence exist but can be problematic. For instance, weak critical thinkers often offer only personal experience or informal observation as evidence. The weak critical thinker also blurs the boundary between data and the interpretation of data, often confusing the latter for the former.

Critical thinkers distinguish the evidence upon which they base their conclusions from the reasoning that connects the evidence to these conclusions. Uncritical thinkers treat their conclusions as inevitable, or as something they directly know from their experience of the world. Consequently, they do not see the need for evidence. Uncritical thinkers also confuse raw data with the interpretation of data.

Use the following questions to orient yourself as you study this topic:

- Are you aware of how much you rely on evidence or data to make decisions in your daily living?
- Have you ever used data or evidence to correct distortions or incorrect conclusions?
- Are you aware when you, or others, withhold relevant evidence from the analysis of an issue?
- Have you ever questioned the use of data or evidence that you thought might be inappropriately applied?

This topic addresses the following competencies:

- Competency 106.1.4: Analysis and Interpretation of Information/Data
  The graduate synthesizes information to understand a problem’s complexities and potential solutions, and then evaluates the reasoning and evidence in support of these different solutions.

Evidence Activity

Go to MindEdge and complete the following modules:

- Module 5: Examining the Evidence
- Module 6: The Use of Statistics

Thinking About Your Thinking

Critical thinking is self-reflective, self-monitored, and self-corrected. It asks that you assess the quality of other peoples’ thinking; still, your own assessments will only be as good as your own
thinking. For example, it is difficult to assess the biases of others if you are unaware of your own. Therefore, critical thinking requires a steady and ongoing assessment of one's own thinking.

The two most common impediments to critical thinking are egocentrism and sociocentrism. Egocentrism emerges from our innate human tendency to view the world from a narrow, self-serving perspective. Its ultimate goals are gratification and self-validation. Sociocentrism is egocentrism raised to a group level. Both are naturally self-serving and dogmatic.

Use the following questions to orient yourself as you study this topic:

- Do you ever catch yourself thinking in a self-deluding or self-serving way?
- Do you think about the consequences for others when you make a decision?
- Do you take time to consistently monitor and self-correct your thinking?
- Have you developed the habit of routinely assessing your thinking in the workplace?
- What strategies are you using to improve your job performance?
- What strategies are you using to improve as a member of your family and community?

This topic addresses the following competencies:

- Competency 106.1.5: Reaching Well-Founded Conclusions
  The graduate logically brings together information to arrive at a viable solution to a problem, and then clearly and accurately communicates the results.

Thinking About Your Thinking Activity

Go to MindEdge and complete the following module:

- Module 7: Thinking About Your Thinking

Critical Thinking in the Disciplines

Critical thinking provides a way to discover the logic of a discipline or profession. By applying the elements of reasoning to a particular discipline or profession, you are able to think through the defining aspects of a body of knowledge. This means that, for a body of knowledge, you are able to identify and understand the organizing concepts important to it, perceive the central questions asked within it, and realize the particular point of view expressed by those working within the profession or discipline that pertains to it. Such disciplinary analysis can also benefit students who want to understand the organizing principles of the disciplines they study.

Use the following questions to orient yourself as you study this topic:

- In what ways is professional knowledge a form of power?
- To what extent can professional knowledge be used to benefit others?
- How can you learn to think about your profession in the most powerful and rational way?
- Is there a difference between how your discipline or profession is ideally perceived and how it is actually practiced?
This topic addresses the following competencies:

- Competency 106.1.6: Identifying the Role of Critical Thinking in the Disciplines and Professions
  The graduate recognizes the value of critical thinking in identifying and understanding the underlying structures of disciplines and professions.

Critical Thinking in the Disciplines Activity

Go to MindEdge and complete the following module:

- Module 8: Critical Thinking in the Disciplines and Professions

Practice Question Sets

Go to MindEdge and complete the following module:

- Practice Question Sets

This module contains two question sets designed to help you apply what you've learned in this learning resource. Utilize this activity to help you prepare for the CLC1 objective assessment.

Final Steps

Congratulations on completing the activities in this course! This course has prepared you to complete the assessments associated with this course. If you have not already been directed to complete the assessments, schedule and complete your assessments now.

Completing this domain should have supplied you with an invaluable set of skills -- the ability to think and problem solve critically -- that you can apply to almost any facet of life that you encounter. Every area of study and every profession present daily opportunities to think critically and solve problems through reasoned judgment. The concepts you have learned in this course -- identifying the elements of reasoning and measuring them against a set of standards -- give you a systematic process for solving complex problems. In addition, this understanding of the elements and standards allows you to assess your own thinking process and to improve upon it.

Remember, critical thinking is a practice. It is not expected that you become an expert at it after an introductory course such as this one. A good strategy for continuing practice in this area would be to routinely apply the standards to your own thinking. Whenever you are faced with a problem to solve or a complex issue to work through, ask yourself the following questions:

- Am I thinking clearly?
- Do I need more details and specifics? Should I be more precise?
- Am I using accurate information?
- Are my thoughts relevant to the issue at hand?
- What are the logical conclusions? Are other conclusions feasible?
- Do I need to consider other points of view?
- Am I fully understanding and acknowledging the complexities in the issue?
Final Preparation and Review

These last activities will guide you through the final steps leading up to your completion of the assessment.

Review

Read through each of the following competency statements and write a brief summary of the content each statement asks you to know. If you have trouble with any area, review the chapters and MindEdge modules related to that competency.

If you would like to discuss the competencies with a course instructor, you can reach one at clrps@wgu.edu.

- **Problem Identification and Clarification** - The graduate identifies open-ended problems and evaluates the validity and relevance of different perspectives on the problem.
- **Planning and Information Gathering** - The graduate gathers information from diverse sources representing a range of perspectives on a problem and evaluates it for relevance and credibility.
- **Assumptions and Values** - The graduate identifies biases and assumptions within his/her own thinking on a problem and within the reasoning of a given source, and evaluates the influence and validity of these biases and assumptions.
- **Analysis and Interpretation of Information/Data** - The graduate synthesizes information to understand a problem’s complexities and potential solutions, evaluates the reasoning and evidence in support of these different solutions, and analyzes the implications and consequences of each solution.
- **Reaching Well-Founded Conclusions** - The graduate logically brings together information to arrive at a viable solution to a problem, and then clearly and accurately communicates the results.
- **Identifying the Role of Critical Thinking in the Disciplines and Professions** - The graduate recognizes the value of critical thinking in identifying and understanding the underlying structures of disciplines and professions.