Critical thinking
Why do **YOU** study for a Degree?
Do You Agree With This Statement?

“Some people study all their life and at their death they have learned everything except to THINK”

– Francois Domergue

Why?
Do You Agree?

Why is Imagination so Important? I Need input from you!

IMAGINATION is more important than knowledge.
–Albert Einstein
Why are you into this course?

- To help you improve your Thinking Skills 😊

HOW TO THINK!
What is Thinking?
1.1 What is Thinking?

Why doesn’t SHE like me?

Why doesn’t HE like me?

As you start asking questions and seek answers, you are in fact thinking.
1.1 What is Thinking?

Thinking is a purposeful, organized cognitive process that we use to make sense of our world.
Types of Thinking
1.2 Types of Thinking

Critical Thinking
- Analyzing
- Evaluating
- Reasoning

Problem Solving
Decision Making

Creative Thinking
- New Ideas

Left

Right
What is Critical Thinking?
1.3 What is Critical Thinking?

**WARNING:** THIS MAN IS **NOT** THINKING CRITICALLY!!
1.3 What is Critical Thinking? (2)

“Critical thinking is the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action. “

- Michael Scriven & Richard Paul

More Definitions…
1.3 What is Critical Thinking? (3)

**Critical Thinking** is the general term given to a wide range of cognitive and intellectual skills needed to:

- Effectively identify, analyze, and evaluate arguments.
- Discover and overcome personal prejudices and biases.
- Formulate and present convincing reasons in support of conclusions.
- Make reasonable, intelligent decisions about what to believe and what to do.
1.3 What is Critical Thinking?

- Problem Solving
- Decision Making
- Critical Thinking

• Analyzing
• Evaluating
• Reasoning

Don’t need to memorize definitions! Just understand and practice the core critical thinking skills emphasized in this course.
1.3 What is Critical Thinking? (5)

CRITICAL THINKING SKILLS

Reasoning

Analyzing  Evaluating

Decision Making  Problem Solving
Critical Thinking Standards
1.4 Critical Thinking Standards (CTS)

The most significant critical (intellectual) thinking standards:

- Clarity
- Accuracy
- Precision
- Relevance
- Depth
- Breadth
- Logic
- Fairness
1.4 CTS - Clarity

- Could you elaborate further on that point?
- Could you express that point in another way?
- Could you give me an illustration?
- Could you give me an example?

Clarity is the gateway standard

Source: http://www.ftl.ucf.edu/resources/content/Ruland_CriticalThinkingStandards.pdf
1.4 CTS – Accuracy

- Is that really true?
- How could we check that?
- How could we find out if that is true?

This chicken weighs over 300 pounds.

A statement can be clear but not accurate

Source: http://www.fdl.uf.edu/resources/content/Rubric_CriticalThinkingStandards.pdf
1.4 CTS – Precision

- Could you give more details?
- Could you be more specific?

A statement can be both clear and accurate, but not precise

Source: http://www.fctl.ucf.edu/resources/content/Ruland_CriticalThinkingStandards.pdf
1.4 CTS – Relevance

- How is that connected to the question?
- How does that bear on the issue?

A statement can be clear, accurate, and precise, but not relevant to the question at issue.

Source: http://www.fctl.ucf.edu/resourcex/content/Ruland.CriticalThinkingStandards.pdf
1.4 CTS – Depth

- How does your answer address the complexities in the question?
- How are you taking into account the problems in the question?
- Is that dealing with the most significant factors?

A statement can be clear, accurate, precise, and relevant, but superficial.

Source: http://www.fdl.ucf.edu/resources/content/Ruland_CriticalThinkingStandards.pdf
1.4 CTS – Breadth

- Do we need to consider another point of view?
- Is there another way to look at this question?
- What would this look like from a conservative standpoint?
- What would this look like from the point of view of...?

A line of reasoning may be clear, accurate, precise, relevant, and deep, but lack breadth.

Source: http://www.fctl.ucf.edu/resources/content/Ruland_CriticalThinkingStandards.pdf
1.4 CTS – Logic

- Does this really make sense?
- Does that follow from what you said?
- How does that follow?
- But before you implied this and now you are saying that; how can both be true?


When the combination of thoughts are mutually supporting and make sense in combination, the thinking is "logical."

Source: http://www.fdl.edu/teacourses/content/Ruland_CriticalThinkingStandards.pdf
1.4 CTS – Fairness

Critical thinking demands that our thinking be fair.
- Open-minded
- Impartial
- Free of distorting biases and preconceptions

Fair-mindedness is an essential attribute of a Critical Thinker.

Source: http://www.fdl.edu/taresources/content/Pulverd_CriticalThinkingStandards.pdf
1.4 CTS – Good Thinking is...

CLEAR rather than UNCLEAR
ACCURATE rather than INACCURATE
PRECISE rather than VAGUE
RELEVANT rather than IRELEVANT
CONSISTENT rather than INCONSISTENT
LOGICAL rather than ILLOGICAL
COMPLETE rather than INCOMPLETE
FAIR rather than BIASED

Benefits of Critical Thinking
1.5 Benefits of Critical Thinking

Examples:

- **Academic Performance**
  - Understand the arguments and beliefs of others
  - Critically evaluating those arguments and beliefs
  - Develop and defend one's own well-supported arguments and beliefs.

- **Workplace**
  - Helps us to reflect and get a deeper understanding of our own and others’ decisions
  - Encourage open-mindedness to change
  - Aid us in being more analytical in solving problems

- **Daily life**
  - Helps us to avoid making foolish personal decisions.
  - Promotes an informed and concerned citizenry capable of making good decisions on important social, political and economic issues.
  - Aids in the development of autonomous thinkers capable of examining their assumptions, dogmas, and prejudices.
Barriers to Critical Thinking
1.6 Barriers to Critical Thinking

If Critical Thinking is so important, why is it that uncritical thinking is so common?

Why is that so many people including many highly educated and intelligent people find critical thinking so difficult?
### Common Barriers

<table>
<thead>
<tr>
<th>Lack of relevant background information</th>
<th>Distrust of reason</th>
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<tbody>
<tr>
<td>Poor reading skills</td>
<td>Stereotyping</td>
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<tr>
<td>Poor listening skills</td>
<td>Unwarranted assumptions and stereotypes</td>
</tr>
<tr>
<td>Bias</td>
<td>Relativistic thinking</td>
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<tr>
<td>Prejudice</td>
<td>Scapegoating</td>
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<tr>
<td>Superstition</td>
<td>Rationalization</td>
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<tr>
<td>Egocentrism</td>
<td>Wishful thinking</td>
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<tr>
<td>Socio-centrism</td>
<td>Short-term thinking</td>
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<tr>
<td>Peer pressure</td>
<td>Selective perception / attention</td>
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<tr>
<td>Mindless Conformism</td>
<td>Selective memory</td>
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<tr>
<td>Mindless non-conformism</td>
<td>Overpowering emotions</td>
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<tr>
<td>Provincialism</td>
<td>Self-deception</td>
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<tr>
<td>Narrow-mindedness</td>
<td>Face-saving</td>
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<tr>
<td>Closed-mindedness</td>
<td>Fear of change</td>
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</table>
1.6 Barriers to Critical Thinking

Five **Powerful Barriers** to Critical Thinking:

- **Egocentrism**
  - Self-centered thinking
  - self-interested thinking
  - self-serving bias

- **Sociocentrism**
  - Group-centered thinking
  - Group bias
  - Conformism

- **Unwarranted Assumptions**
  - Beliefs that are presumed to be true without adequate evidence or justification
  - Assumption
  - Stereotyping

- **Wishful Thinking**
  - Believing that something is true because one wishes it were true.

- **Relativistic Thinking**
  - The truth is “just a matter of opinion”
  - Relativism
    - Subjectivism
    - Cultural relativism

I am probably the greatest thinker since Socrates!
Characteristics of a Critical Thinker
1.7 Characteristics of a Critical Thinker

Are you **OPEN MINDED** about other people’s view?

Are you **HONEST** to yourself (or others) when you are wrong?

Do you have the **COURAGE** and **PASSION** to take initiative and confront problems and meet challenges?

Are you **AWARE** of your own biases and preconceptions?

Do you **WELCOME CRITICISM** from other people?

Do you have **INDEPENDENT** opinions and are not afraid to disagree?
<table>
<thead>
<tr>
<th>Critical Thinkers</th>
<th>Uncritical Thinkers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Have a passionate</strong> drive for clarity, precision, accuracy, relevance, consistency, logicalness, completeness, and fairness.</td>
<td>Often think in ways that are unclear, imprecise, inaccurate, etc.</td>
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<tr>
<td><strong>Are sensitive</strong> to ways in which critical thinking can be skewed by egocentrism, sociocentrism, wishful thinking, etc.</td>
<td>Often fall prey to egocentrism, sociocentrism, wishful thinking, etc.</td>
</tr>
<tr>
<td><strong>Are intellectually honest</strong> with themselves, acknowledging what they don’t know and recognizing their limitations.</td>
<td>Pretend they know more than they do and ignore their limitations.</td>
</tr>
<tr>
<td><strong>Listen open-mindedly</strong> to opposing points of view and <strong>welcome criticisms</strong> of beliefs and assumptions.</td>
<td>Are close-minded and resist criticisms of beliefs and assumptions.</td>
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<tr>
<td>Base their <strong>beliefs on facts and evidence</strong> rather than on personal preference or self-interest.</td>
<td>Often base their beliefs on mere personal preference or self interest.</td>
</tr>
<tr>
<td><strong>Are aware of the biases and preconceptions</strong> that shape the way they perceive the world.</td>
<td>Lack awareness of their own biases and preconceptions.</td>
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<tr>
<td><strong>Think independently</strong> and are not afraid to disagree with group opinion.</td>
<td>Tend to engage in ‘group think’, uncritically following the beliefs and values of the crowd.</td>
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<tr>
<td>Are able to <strong>get to the heart of an issue or problem</strong>, without being distracted by details.</td>
<td>Are easily distracted and lack the ability to zero in on the essence of a problem or issue.</td>
</tr>
<tr>
<td><strong>Have the intellectual courage</strong> to face and assess fairly ideas that challenge even their most basic beliefs.</td>
<td>Fear and resist ideas that challenge their basic beliefs.</td>
</tr>
<tr>
<td><strong>Love truth</strong> and <strong>curious</strong> about a wide range of issues.</td>
<td>Are often relatively indifferent to truth and lack of curiosity.</td>
</tr>
<tr>
<td><strong>Have the intellectual perseverance</strong> to pursue insights or truths, despite obstacles or difficulties.</td>
<td>Tend to preserve when they encounter intellectual obstacles or difficulties.</td>
</tr>
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### Summary

1. **What is Thinking?**
   Thinking is a purposeful, organized cognitive process that we use to make sense of our world.

2. **Types of Thinking**
   Creative & Critical Thinking

3. **What is Critical Thinking?**
   Critical Thinking is the general term given to a wide range of cognitive and intellectual skills needed to: Effectively identify, analyze, and evaluate arguments; Discover and overcome personal prejudices and biases; Formulate and present convincing reasons in support of conclusions; and Make reasonable, intelligent decisions about what to believe and what to do. Critical thinking skills emphasized in this course, include: Reasoning, Analyzing, Evaluating, Decision Making and Problem solving.

4. **Critical Thinking Standards**
   Clarity, Accuracy, Precision, Relevance, Depth, Breadth, Logic and Fairness

5. **Benefits of Critical Thinking**
   Academic performance, workplace and daily life.

6. **Barriers to Critical Thinking**
   Examples include Egocentrism, Sociocentrism, Unwarranted Assumptions, Wishful Thinking, and Relativistic Thinking

7. **Characteristics of a Critical Thinker**
   Open-mindedness, independent thinking, self-aware, passionate, insightful, honest and intellectual humility, intellectual courage, and welcome criticism, etc.
The End