Study Guide for the course CC2002
Creative and Critical Thinking

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1. Syllabus of CC2002 Creative and Critical Thinking

Level: 2  
Credits: 3  
Nature: Non-science  
Teaching Pattern: 28 hours of Lecture  
14 hours of Tutorial/Workshop  
Prerequisite: Nil  
Assessment: 60% Coursework 40% Examination

Aims

This subject equips students with critical and creative thinking skills. It provides the conceptual framework to identify problems in both everyday life and specific domains and to make the right and appropriate decisions. By widening their horizon and stimulating their multi-dimensional thinking style, it cultivates a proper attitude which promotes students’ critical and creative power. Studying the subject will also help develop students’ critical thinking and creative thinking for their life-long learning and facilitate their future work prospect.

Learning Outcomes

On successfully completing this subject, students will be able to:
- Understand the importance of thinking skills in their everyday life.
- Appreciate their existing thinking habits, mental blocks and attitudes that hinder them from being creative and/or critical.
- Be aware of the different types of thinking, how they are different, how they can complement each other and how they can be applied to everyday situations.
- Become more attuned to fallacious reasoning in everyday life and know how to correct the fallacies found.
- Apply the techniques for critical thinking in evaluating solutions and arguments.
- Develop the attitude and techniques for creative problem solving.
- Apply the basic skills for working in innovative problem solving teams.

Indicative Contents

- **Thinking as a Skill**  
  Concept of Thinking; Importance of thinking; Habitual thinking vs thinking as a deliberate skill that can be controlled; Vertical (critical) vs lateral (creative) thinking; Attitude and psychological preparations for thinking.
- **Critical Thinking: Introduction**  
  Critical thinking; Role of critical thinking and how it can complement creative thinking in problem solving; Logic and critical thinking.
- **Refining Solutions to Problems**  
  Steps in refining: working out details, finding imperfections and complications, and making improvements and decisions.
Evaluating Arguments
Common errors affecting truth including either/or thinking, issue avoidance, overgeneralization, double standards, shifting burden of proof, and irrational appeal; Common errors affecting validity.

Creative Thinking: Introduction
Creativity as an ability to modify self-imposed constraints; Characteristics of creative people; Basic elements affecting creativity in practice: person, process, product and climate; Introduction to stages in the creative process.

Generating Ideas
Avoiding blocks to creativity; Stimulating ideas using various techniques and tools: forced uncommon responses, free association, analogy, unusual combinations, visualization, brain storming, and Edward de Bono’s various techniques such as the six thinking hats, etc.

Creative and Critical Thinking in Teams
Characteristics of effective teams; Stimulating creativity and problem solving in teams; Communication, trust building and conflict-reduction for teams.

Teaching/Learning Approach
The emphasis of the subject is on enabling students to acquire the attitudes and skills in practical thinking. Lectures will be used to explain and demonstrate the topics and techniques introduced. Games, cases and exercises will be used during tutorials to let students experience thinking in action. To motivate students to actively change their own attitudes and participate in experiential workshop-style tutorials, a lot of interesting and daily examples and cases will be used as illustration/demonstration during lectures, for exercises during tutorials and for assignments. To achieve the best learning outcomes, the lecturer/instructor will try to create a climate that is challenging, dynamic and yet idea-supporting, trusting, and playful. Debates and risktaking will be encouraged, which facilitates students’ making their own judgments in a rational as well as fluent way. Both English and Chinese will be used as the medium of instruction and in assessments.

Assessment Approach
A variety of assessment tools will be used, including presentations, case studies, written reports, tests and examination designed to develop and assess students’ creative and critical thinking as well as communication skills.

Indicative Reading
Recommended Textbooks

References
De Bono, Edward, Creativity, HarperCollins Publisher, (latest ed.).
李天命著：《語理分析的思考方法》（香港：青文書屋，1982）.
勞思光著：《思想方法五講新編》（香港：香港中文大學，2000）.
李天命著：《從思考到思考之上》（香港：明報出版社，2002）.
Learning Outcomes
On successfully completing this subject, students will be able to:
- Understand the importance of thinking skills in their everyday life.
- Appreciate their existing thinking habits, mental blocks and attitudes that hinder them from being creative and/or critical.
- Be aware of the different types of thinking, how they are different, how they can complement each other and how they can be applied to everyday situations.
- Become more attuned to fallacious reasoning in everyday life and know how to correct the fallacies found.
- Apply the techniques for critical thinking in evaluating solutions and arguments.
- Develop the attitude towards and techniques for creative problem solving.
- Apply the basic skills for working in innovative problem solving teams.
# Tentative Teaching Schedule

<table>
<thead>
<tr>
<th>No</th>
<th>Lecture</th>
<th>Content</th>
<th>No</th>
<th>Tutorial</th>
<th>Content</th>
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<tbody>
<tr>
<td>1</td>
<td>Lecture 1: Introduction</td>
<td></td>
<td>1</td>
<td>Nil</td>
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<tr>
<td>2</td>
<td>Lecture 2: Creative Thinking (I): Basic Concepts</td>
<td>Tutorial #1: Introduction</td>
<td>2</td>
<td>Tutorial #2: Creative Thinking</td>
<td>Remarks: Release of Assignment 1</td>
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<tr>
<td>3</td>
<td>Lecture 3: Creative Thinking (II): Creative Problem Solving and Six Thinking Hats</td>
<td>Tutorial #3: Argument Analysis and Standard Form Writing</td>
<td>3</td>
<td>Tutorial #4: Linguistic-conceptual Analysis (I)</td>
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<td>5</td>
<td>Lecture 5: Deductive Reasoning (I): Recognizing Arguments and the Difference between Deductive Arguments and Inductive Arguments</td>
<td>Tutorial #7: Deductive Reasoning: Validity and Soundness of Deductive Arguments</td>
<td>5</td>
<td>Tutorial #8: Categorical Logic</td>
<td>Submission of Assignment 2</td>
</tr>
<tr>
<td>7</td>
<td>Mid-term Revisions:</td>
<td></td>
<td>7</td>
<td>Mid-term Test (From Lecture 4 to 6)</td>
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<tr>
<td>8</td>
<td>Mid-term Test (From Lecture 4 to 6)</td>
<td>Tutorial #7: Deductive Reasoning: Recognizing Arguments and the Difference between Deductive Arguments and Inductive Arguments</td>
<td>8</td>
<td>Tutorial #8: Categorical Logic</td>
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<tr>
<td>9</td>
<td>Lecture 7: Deductive Reasoning (III): Categorical Logic</td>
<td>Tutorial #9: Inductive Reasoning</td>
<td>9</td>
<td>Tutorial #10: Fallacies</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Lecture 8: Inductive Reasoning: Inductive Generalization and Analogical Argument (I)</td>
<td>Presentation of Group Projects #1</td>
<td>10</td>
<td>Presentation of Group Projects #2</td>
<td></td>
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<tr>
<td>11</td>
<td>Lecture 9: Inductive Reasoning: Inductive Generalization and Analogical Argument (II)</td>
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<td>12</td>
<td>Lecture 10: Fallacies (I)</td>
<td>Presentation of Group Projects #3</td>
<td>12</td>
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<tr>
<td>13</td>
<td>Lecture 11: Fallacies (II)</td>
<td>Tutorial #9: Inductive Reasoning</td>
<td>13</td>
<td>Submission of Assignment 1</td>
<td></td>
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<tr>
<td>14</td>
<td>Revisions</td>
<td>Tutorial #10: Fallacies</td>
<td>14</td>
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Assessment Weighting

Coursework:  60 %
Examination:  40 %
100%

Assessment Methods for Coursework

Mid-Term Test  40 %
Assignment 1  30 % (Group)
Assignment 2  20 % (Individual)
Participation*  10 %
100%

*Student participation will be assessed according to the following guidelines:
- Complete silence at all times and do not talk even when repeatedly asked by peers or teacher → 0%
- No initiative to talk but will talk when asked by peers or teacher → 2.5%
- Has an initiative to talk with peers, and to respond to teacher’s questions → 5%
- Has an initiative to talk with peers, to respond to teacher’s questions, and to lead peers to talk → 7.5%
- Has an ability to lead peers to talk, and is highly responsive to teacher’s questions → 10%

Attendance and Other Rules / Regulations

The attendance requirement and all other rules and regulations in the HKCC Student Handbook and in the respective Programme Definitive Document apply. Please refer to these documents for details.

Lecture/Tutorial Notes and Assignments

Students are required to download lecture/tutorial notes and assignments from Moodle.
References

1. 李天命：《語理分析的思考方法》，香港：青文書屋。
2. 李天命：《哲道行者》，香港：明報出版社。
3. 李逆熵：《格物致知 — 思考與研究方法概要》，經濟日報出版社。
10. 思方網（香港大學）：http://philosophy.hku.hk/think/chi/
3. Learning Outcome Matrix of CC2002 Creative and Critical Thinking

**Subject Learning Outcomes**
(a) Understand the importance of thinking skills in their everyday life.
(b) Appreciate their existing thinking habits, mental blocks and attitudes that hinder them from being creative and/or critical.
(c) Be aware of the different types of thinking, how they are different, how they can complement each other and how they can be applied to everyday situations.
(d) Become more attuned to fallacious reasoning in everyday life and know how to correct the fallacies found.
(e) Apply the techniques for critical thinking in evaluating solutions and arguments.
(f) Develop the attitude towards and techniques for creative problem solving.
(g) Apply the basic skills for working in innovative problem solving teams.

**Learning Outcome Matrix for each Lecture**

<table>
<thead>
<tr>
<th>Lecture</th>
<th>Learning Outcomes</th>
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<tbody>
<tr>
<td>Lecture 1: Introduction</td>
<td>(a) ✓</td>
</tr>
<tr>
<td>Lecture 2: Creative Thinking (I): Basic Concepts</td>
<td>(a) ✓ (b) ✓ (c) ✓ (d) ✓ (e) ✓ (f) ✓ (g) ✓</td>
</tr>
<tr>
<td>Lecture 3: Creative Thinking (II): Creative Problem Solving and Six Thinking Hats</td>
<td>(a) ✓ (b) ✓ (c) ✓ (d) ✓ (e) ✓</td>
</tr>
<tr>
<td>Lecture 4: Linguistic-conceptual Analysis</td>
<td>(a) ✓ (b) ✓</td>
</tr>
<tr>
<td>Lecture 5: Deductive Reasoning (I): Recognizing arguments and the difference between deductive arguments and inductive arguments</td>
<td>(a) ✓</td>
</tr>
<tr>
<td>Lecture 6: Deductive Reasoning (II): Validity and Soundness of Deductive Arguments</td>
<td>(a) ✓ (b) ✓ (c) ✓ (d) ✓</td>
</tr>
<tr>
<td>Lecture 7: Deductive Reasoning (III): Categorical Logic</td>
<td>(a) ✓</td>
</tr>
<tr>
<td>Lecture 8: Inductive Reasoning: Analogical Argument and Inductive Generalization</td>
<td>(a) ✓ (b) ✓</td>
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<tr>
<td>Lecture 9: Fallacies (I)</td>
<td>(a) ✓ (b) ✓ (c) ✓</td>
</tr>
<tr>
<td>Lecture 10: Fallacies (II)</td>
<td>(a) ✓ (b) ✓</td>
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**Learning Outcome Matrix for the whole Coursework**

<table>
<thead>
<tr>
<th>Coursework Components</th>
<th>Learning Outcomes</th>
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<tr>
<td>Mid-term Test</td>
<td>(a) ✓ (b) ✓ (c) ✓ (d) ✓ (e) ✓ (f) ✓ (g) ✓</td>
</tr>
<tr>
<td>Individual Assignment 1</td>
<td>(a) ✓ (b) ✓ (c) ✓ (d) ✓ (e) ✓ (f) ✓ (g) ✓</td>
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<tr>
<td>Group Assignment 2</td>
<td>(a) ✓ (b) ✓ (c) ✓ (d) ✓ (e) ✓ (f) ✓ (g) ✓</td>
</tr>
<tr>
<td>Participation</td>
<td>(a) ✓ (b) ✓ (c) ✓ (d) ✓ (e) ✓ (f) ✓ (g) ✓</td>
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Lecture 1  Introduction

Aims
As the beginning of the course, this lesson introduces the course in general. Apart from the relevant policies and coursework requirements, both the content and the structure of this course will be outlined, in order to let students have a general but clear concept of what they are going to learn.

Learning Outcomes
Students who attend the lectures and tutorials should be able to:

• Explain the basic meaning and significance of thinking in everyday life, in workplace, as well as in academic environment.
• Distinguish the different objectives and characteristics between creative and critical thinking.
• Identify the 4 main parts of critical thinking, namely, linguistic-conceptual analysis, fallacy analysis, deductive reasoning and inductive reasoning.

Key Concepts
To think is to make a mental effort to consider something.

Critical Thinking is “the general term given to a wide range of cognitive skills and intellectual dispositions needed to effectively identify, analyse, and evaluate arguments and truth claims, to discover and overcome personal prejudices and biases, to formulate and present convincing reasons in support of conclusions, and to make reasonable, intelligent decisions about what to believe and what to do.” (G. Bassham et al, Critical Thinking: A Student’s Introduction, p.1)

Creative Thinking is the thinking that leads to an outcome that is both new and good.

Critical Thinking has 4 main parts, namely, linguistic-conceptual analysis, fallacy analysis, deductive reasoning and inductive reasoning.

Linguistic-Conceptual Analysis is the practice of clarifying linguistic expressions to facilitate clear and precise thinking.

Fallacy Analysis is the detection of any mistake in thinking.

Deductive reasoning and inductive reasoning are 2 different kinds of thinking process which justify a conclusion.

Whereas creative thinking enables us to generate new and interesting thoughts, critical thinking provides the necessary skills for us to assess the clarity and the rationality of the thought. Critical thinking and creative thinking work hand in hand.
Reference
Lecture 2  Creative Thinking I: Basic Concepts

Aims
This lesson introduces the basic concepts of creativity. These include the definition of creativity and how to generate it or the technique of creative thinking.

Learning Outcomes
Students who attend the lectures and tutorials should be able to:

- Explain the differences and the relationship between creative and critical thinking.
- Understand the meaning and significance of creative thinking in everyday life and specific domains.
- Use some basic techniques to generate and present creative ideas.

Key Concepts
It is best to view critical thinking and creative thinking as working hand in hand. Most investigators (psychologists) in the field broadly define creativity as the process of producing something that is both original (novel) and worthwhile (constructive)

- Original: That something has not been produced before by anybody.
- Worthwhile: That something is meaningful and useful to a given situation.

There are 5 basic techniques of creativity: de-labeling, viewpoint changing, re-organization, usage changing, and creative imitation.

References
1. 劉世南、郭誌光:〈創造力的概念與理論:一個心理構念的反思〉，載於 http://adm.ncyu.edu.tw/~soarts/reativity/B-04.htm
2. 賴聲川:《賴聲川的創意學》，台北:天下雜誌，2006。
3. 詹宏志:《創意人－－創意思考的自我訓練》，台北:城邦文化，1998。
4. 黃伯康:《宏觀創意－－矛盾·融合·創意》，香港:三聯，2005。
Lecture 3  Creative Thinking II: Creative Problem Solving and Six Thinking Hats

Aims
Problem solving is one of the important and advantageous outcomes of creative thinking. It satisfies the requirement of “worthiness” of creativity and makes our life better and interesting. This lesson outlines the steps of creative problem solving, and introduces one creative problem solving skill developed by Edward de Bono: Six Thinking Hats.

Learning Outcomes
Students who attend the lectures and tutorials should be able to:

- Explain the meaning and significance of creative problem solving in everyday life.
- Understand the steps and stages of creative problem solving. Use these steps to explain other people’s creative ideas, and also follow these steps to make one’s own.
- Grasp and therefore use the basic principles of Six Thinking Hats as a technique of creative problem solving.

Key Concepts
Steps of Creative Problem Solving (CPS):
1. What is the situation or the environment?
2. How do you pinpoint the problem?  
   (the first stage of CPS: Identifying Problems)
3. What is the strategy you adopt to deal with the problem that you have identified?
4. What are the assumptions behind the strategies?  
   (the second stage of CPS: Strategies & Assumptions)
5. How effective is the strategy?
6. Is there any new problem? What would be the new situation? ...
   (the third stage of CPS: Implementation & Control)

'Six Thinking Hats' is a technique invented by Edward de Bono, used to tackle problems and make decisions from a number of important perspectives. This forces you to move outside of your habitual thinking style, and helps you get a more rounded view of a situation.

A Hat indicates a role. When people start thinking along a certain role, they adopt a certain direction of thinking.

White Hat: Neutral and objective. It is about facts and figures.

Red Hat: Anger, rage and emotion. It gives the emotional view.

Black Hat: Somber and serious, careful and cautious. It points out the weakness in an idea.

Yellow Hat: Sunny and optimistic. It covers hope and positive thinking.
**Green Hat**: Grass, vegetation, abundant, fertile and growth. It indicates creativity and new ideas.

**Blue Hat**: Cool. Colour of the sky. It is above everything. Control. Organization of the thinking process.

**References**

Lectures 4 and 5  Linguistic-conceptual Analysis

Aims
This lesson introduces 1) the basic ideas of linguistic-conceptual analysis and 2) the three categories of linguistic traps, namely obscurity in meaning, conceptual deflection and vacuous expression.

Learning Outcomes
Students who attend the lectures and tutorials should be able to:

• Identify the tasks of linguistic-conceptual analysis.
• Identify and distinguish various elements in linguistic-conceptual analysis.
• Analyze a speech or a written article with the basic concepts introduced.
• Distinguish the three basic categories of linguistic traps.
• Identify the various linguistic traps involved in any spoken or written materials.
• Explain how a piece of spoken or written material commits the language traps.
• Avoid falling into the language traps.

Key Concepts

Linguistic-Conceptual Analysis: The practice of clarifying linguistic expressions to facilitate clear and precise thinking

Meaning: The conceptual content expressed by a linguistic expression

Reference: The object referred to by a linguistic expression

Statement: a collection of words which expresses a state of affair

Proposition: The conceptual content expressed by a statement

Linguistic Traps: Linguistic-conceptual problems that hamper clear and precise thinking.

1 Obscurity in Meaning (語意曖昧): A person commits the linguistic trap of obscurity in meaning when he uses an expression that does not provide sufficient linguistic meaning in a given context, rendering the audience unable to grasp what he really means.

11 Unsubstantial Meaning (語意虛浮): Using a linguistic expression which is so vague that the audience cannot, given the context, reasonably grasp the precise message supposed to be delivered.

12 Disordered Meaning (語意錯亂): Using a meaningless phrase formed by merely piecing some meaningful words together in an incomprehensible manner.
II Conceptual Deflection (概念滑轉): A person commits the linguistic trap of *conceptual deflection* when he injects too much linguistic meaning into a linguistic expression, rendering the audience confused and unable to grasp what he really means.

III Conceptual Confusion (概念混淆): Using an ambiguous linguistic expression deceptively, switching from one meaning to another without proper explanation and justification.

II2 Conceptual Distortion (概念扭曲): Using an expression in an idiosyncratic manner that is totally deflected from its ordinary use and meaning without proper explanation and justification.

III Vacuous Expression (言辭空廢): A person commits the linguistic trap of *vacuous expression* when he uses a linguistic expression which, despite having a precise meaning (even being true), does not provide adequate substantial information required in a given context.

III1 Relative Vacuity (相對空廢): Using a sentence which merely states facts that are trivial to convey substantial information in a given context.

III2 Absolute Vacuity (絕對空廢): Using a tautology, which does not carry any substantial informative content, to convey substantial information.

References
何秀煌，《記號學導論》，台北：水牛出版社，1992。
李天命，《語理分析的思考方法》，台北：鵝湖，1982。
李天命，《李天命的思考藝術》（終定本），戎子由、梁沛霖合編，香港：明報，1999。
李天命，《哲道行者》，香港：明報，2005。
Lecture 6  Deduction I: Recognizing Arguments and the Difference between Deductive Arguments and Inductive Arguments

Aims
This lesson introduces the concept of an argument in logic. It helps students identify what an argument is and is not (and give reasons why it is so). The lesson will then explain the concepts of reason and cause, which constitute the essence of arguments and explanations respectively. It will then go on to explicate the difference between deductive arguments and inductive arguments. By going through this lesson, students will be able to grasp the basic building elements of logical analysis.

Learning Outcomes
Students who attend this lecture and the ensuing tutorial should be able to:
- Explain the meaning of sentences, statements and propositions
- Explain what is an argument and what is an inference in logical analysis
- Be able to tell whether a given cluster of sentences contains an argument or not
- Identify the difference between a reason and a cause
- Identify the difference between an argument and an explanation
- Differentiate between deductive arguments and inductive arguments

Key Concepts
A **statement** is a sentence which states that something is the case.

A **proposition** is the meaning of a statement.

An **inference** is the mental process of linking propositions in which a proposition is claimed to be justified by other propositions.

An **argument** is a group of statements in which one statement is claimed to be justified by (or to follow from) other statements.

A **reason** is something used to justify a conclusion in an argument.

A **cause** is something used to account for a certain event in an explanation.

An **explanation** is the act or process which claims to give the causes and to account for why something is the case.

A **deductive argument** is an argument in which the conclusion is claimed to be justified by (or to follow from) the premise(s) with necessity, i.e., it is claimed to be necessary that the conclusion is true if all the premises are true.

An **inductive argument** is an argument in which the conclusion is claimed to be justified by (or to follow from) the premise(s) with a certain degree of probability, i.e., it is claimed to be probable that the conclusion is true if all the premises are true.
References
方子華等：《批判思考》，Singapore: McGraw Hill (Asia), 2005。
Lecture 7 Deduction II: Validity and Soundness of Deductive Arguments

Aims
This lecture introduces two key concepts in deductive arguments: validity and soundness. The lesson then goes on to discuss the concepts of sufficiency and necessity in conditional statements. Typical forms of valid and invalid deductive arguments will be brought up and explained at the end of the lecture. Studying this lesson, students are able to differentiate valid inferences from invalid inferences, and on top of which, to distinguish good arguments from bad ones.

Learning Outcomes
Students who attend the lecture and the ensuing tutorial should be able to:
• Explain the concept of validity in deductive arguments.
• Explain the concept of soundness in deductive arguments by which good arguments are differentiated from bad ones.
• Explain what is a sufficient condition and what is a necessary condition in conditional statements.
• Recognize typical forms of valid and invalid deductive arguments.

Key Concepts
A deductive argument is valid if the conclusion is justified by (or follows from) the premises with necessity, i.e., it is necessary that the conclusion is true if all the premises are true. Otherwise it is invalid.

A deductive argument is sound if it is valid and all premises are true. Otherwise it is unsound.

A good deductive argument is a sound deductive argument.

A bad deductive argument is an unsound deductive argument.

For a conditional statement, the property expressed by the antecedent is a sufficient condition for the property expressed by the consequent, and the property expressed by the consequent is a necessary condition for the property expressed by the antecedent.

Two forms of valid deductive argument are covered: Affirming Antecedent [Modus Ponens] and Denying Consequent [Modus Tollens]. On the other hand, two forms of invalid deductive argument are also covered: Denying Antecedent and Affirming Consequent.

References
Lecture 8  Deduction III: Categorical Logic

Aims
This lesson introduces students the basic elements of Aristotelian categorical logic. The 4 standard-forms of categorical statements will first be discussed. Then the topic of categorical syllogism will be brought up. The lecture goes on to introduce the method of Venn diagrams, a tool which is used to test the validity of categorical syllogism. By going through this lesson, students will be exposed to the first systematic form of deductive logic in Western history, which still finds applications in many of our daily arguments.

Learning Outcomes
Students who attend the lecture and the ensuing tutorial should be able to:

- Identify the 4 standard forms of categorical statements.
- Explain what a categorical syllogism is.
- Translate day to day verbal statements into the standard forms of categorical statements.
- Use Venn diagrams to represent categorical statements and test the validity of categorical syllogisms.

Key Concepts
Aristotelian Categorical Logic forms the first system of formal deductive logic in the history of western thinking.

Categorical logic deals with the conditions of truth and falsity of statement forms and the conditions of validity of argument forms with respect to the infra-structure of statement forms.

A categorical statement is a statement having a subject term, a predicate term, a quantifier specifying the former, and a copula linking the former and the latter. Both the subject term and the predicate term are class names. The quantifier is either universal or particular; the copula is either affirmative or negative.

The 4 standard-forms of categorical statements are:

- Universal Affirmative Statement (A): All S are P
- Universal Negative Statement (E): No S are P
- Particular Affirmative Statement (I): Some S are P
- Particular Negative Statement (O): Some S are not P

A categorical syllogism is a three-line deductive argument which is composed of three categorical statements in standard form having three class names in total, each occurring twice and in different statements.

A categorical syllogism in standard form contains exactly three terms:
- Major term (P): the predicate of the conclusion
- Minor term (S): the subject of the conclusion
- Middle term (M): the term which appears only in the premises

The validity of a categorical syllogism can be tested effectively by Venn diagrams.
References
方子華等：《批判思考》，Singapore: McGraw Hill (Asia), 2005。
Lecture 9  Induction

Aims
This lesson introduces two forms of inductive argument in detail. They are analogical argument and inductive generalization. Studying this subject, students will be able to understand the structure of two basic forms of inductive argument.

Learning Outcomes
Students who attend the lectures and tutorials should be able to:
• Explain the formal difference between analogical arguments and inductive argument.
• Identify the sample, target class and the target object from the respective inductive argument.
• Identify the primary subject, analogue, similarities, and the property of the target object from an analogical argument.
• Identify the population and sample from an inductive generalization.
• Analyse and evaluate the strength of the two forms of inductive argument.

Key Concepts
An **inductive argument** is an argument with the premises which are intended to provide some degree of *probability* for the truth of the conclusion.

**Analogical arguments** attempt to conclude a claim from the similarities between an observed object and an unobserved object.

**Inductive generalizations** attempt to conclude a claim about a group from a claim about some part of it.

The Nature of a Cogent Analogical Argument and a Cogent Inductive Generalization:
A good analogical argument will have true premises, prominent relevant similarities and a great diversity of sample and relatively strong sample size, etc.
A good inductive argument will have true premises, impartial sampling, and representative sample drawn from a relatively strong sample size.

**Causal argument**: We call **any** argument in which the conclusion is a *causal claim* a causal argument. The *form of the argument* can be inductive generalizations or analogical arguments.

A **causal claim** states the presence (or absence) of causation.

**Identifying Causal Relationships**
When there is a causal relationship between two things or events, we may usually identify the following conditions:

1. **Temporal sequence** (時序): Event A comes *before* Event B.
(2) **Correlations (相連性)**: Event A *regularly* (frequently or constantly) occurs together with Event B. We may identify three types of correlations here:

- Positive Correlation: A occurs together with B.
- Negative Correlation: A occurs together with the absence of B. (A prevents B.)
- Concomitant Correlation: The variation of B is in direct or *inverse proportion* to the variation of A.

(3) **Possibility of Manipulation (操縱的可能)**: Changing Event A changes Event B.

**Limits of the conditions** (1), (2) and (3)

1. Temporal Sequence: Not every event that comes before another causes the other.
2. Correlation: The perception of cause and effect is heavily influenced by quality of the observation. Selective attention and memory, for instance, can be problems here.
3. Manipulation requires a controlled environment where other factors are held to be constant. But not all factors can be controlled, especially in researches regarding human subjects and their societies.

**References**
Lecture 10 Fallacies I

Aims
This lesson introduces the concept of fallacy. Two categories of fallacies are discussed in detail, namely the fallacies of inconsistency and fallacies of irrelevancy. Studying this subject, students are able to understand the nature of various fallacies falling under these two categories.

Learning Outcomes
Students who attend the lectures and tutorials should be able to:
- Distinguish the four basic categories of fallacies.
- Identify the various instances of fallacies of inconsistency and irrelevancy.
- Explain how a speech or an argument commits the fallacies.
- Avoid committing the fallacies.

Key Concepts
A fallacy is an error in thinking.

There are 4 categories of fallacies: Inconsistency, Irrelevancy, Insufficiency and Inappropriate Presumption.

The Fallacies of Inconsistency: A person commits the fallacies of inconsistency when some of his beliefs conflict with his other beliefs.

Self Contradiction: Affirming a proposition and its negation at the same time.

Self Defeating: Affirming a proposition in a way that denies itself in the very context of its utterance.

Double Standard: Employing different standards in evaluating similar situations without any reasonable justification.

The Fallacies of Irrelevancy: A person commits the fallacies of irrelevancy when what he says is not related to the original issue in question, or when he gives an argument, there is not any real connection between the premises and the conclusion.

Argument Ad Populum: Mistakenly arguing for p by appealing to the fact that all or many people (of a certain group) believe p.

Argument Ad Hominem: Attacking an opponent’s view or position by appealing to his problematic character, social status or special circumstances, instead of giving irrelevant reasons.
**Appeal to Inappropriate Authority** 僞托權威: Justifying a conclusion $p$ by appealing to the fact that “$x$ says that $p$ is true” when
1) $x$ is not any authority at all; OR
2) $x$ is an authority in a field irrelevant to the one in question; OR
3) the issue in question is of the nature that no appealing to authority is appropriate.

**Strained Analogy** 牽強比附: An analogical argument in which the similarity between the two cases in question is only superficial and irrelevant to the target object, whereas their differences are relevant and significant.

**Smuggling a Fake Subject** 偷換論題: A different issue is smuggled to replace the original issue in question.

**Attacking a Straw Man** 刺稻草人: Attacking an argument by distorting and misrepresenting the argument’s original focus and intention.

**Red-herring** 轉移視線: Distracting the opponent by merely changing the subject in question to an irrelevant one.

**Fallacies of Ambiguity** 歧義謬誤: An ambiguous expression (i.e. a word, a phrase, a clause or a sentence) is used in different meanings in different parts of an argument or dialogue, giving a false impression that the same expression is used consistently, while the premises and the conclusion or the question and its response are indeed irrelevant.

**References**
李天命，《哲道行者》，香港：明報，2005。
Lecture 11 Fallacies II

Aims
This lesson introduces the two remaining categories of fallacies, namely the fallacies of insufficiency and fallacies of inappropriate presumption. The lesson will enable students to understand the nature of various fallacies falling under these two categories.

Learning Outcomes
Students who attend the lectures and tutorials should be able to:

- Identify the various instances of fallacies of insufficiency and inappropriate presumption.
- Explain how a speech or an argument commits the fallacies.
- Avoid committing the fallacies.

Key Concepts

**Fallacies of Insufficiency** 不充分謬誤: A person commits the fallacies of insufficiency when he gives an argument where the premises are not strong enough to support the conclusion.

**Hasty Generalization** 以偏概全: An inductive generalization in which
1) the sample size is too small; OR
2) there is a structural bias in the sample; OR
3) there are known but unmentioned unfavorable, contradicting findings against the conclusion supposed to be drawn.

**Accident** 以全蓋偏: Applying an inductive generalization to known exceptional cases or accidental circumstances.

**Composition** 合成: Mistakenly arguing for the conclusion that the whole has a certain property \( p \) by appealing to the fact that its parts have \( p \).

**Division** 分割: Mistakenly arguing for the conclusion that the parts have a certain property \( p \) by appealing to the fact that the whole has \( p \).

**Post hoc Fallacy** 居後為果: Asserting that event B is the effect of event A simply on the ground that B follows A.

**Denying Antecedent** 否定前項:

If \( p \), then \( q \).
Not \( p \).
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\( \therefore \) Not \( q \).
Affirming Consequent 肯定後項:

If p, then q.
q.
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∴ p.

Appeal to Ignorance 訴諸無知: A proposition is claimed to be true (or false) simply on the ground that it has not been proved false (or true).

Fallacies of Inappropriate Presumption 不當預設謬誤: A person commits the fallacies of inappropriate presumption when he takes certain controversial propositions or dubious assumptions for granted.

Complex question 混合問題: A fallacious question asked in such a way that presupposes certain propositions which cannot be taken for granted in that context.

Begging the Question 乞求論點 / Circular Argument 循環論證: An argument in which the conclusion is stated or assumed as one of the premises.

False Dilemma 假兩難: Assuming that there are only two alternatives whereas in fact there are more alternatives than the two stated.

References
李天命，《哲道行者》，香港：明報，2005。
Exercise for Lecture 1: Introduction

1. Linguistic-Conceptual Analysis

Reflect upon the daily usage of the following pairs of similar concepts and try to articulate their subtle differences:

a. Human Being (人類) and Rational Animal (理性的動物)
b. Envy (羨慕) and Jealousy (嫉妒 / 妒忌)
c. Fond of / Like someone (喜歡 / 鍾意一個人) and in Love with someone (愛一個人)
d. Impartiality (公平) and Justice (公正 / 正義)

2. Argument Analysis and Evaluation

a. The following passage was written by B. Russell, a famous philosopher in the 20th century. Why does Russell find the nun’s thinking curious? What’s the logical problem committed by the nuns? (You can use standard form to write down the nun's argument.)

“I am sometimes shocked by the blasphemies of those who think themselves pious - for instance, the nuns who never take a bath without wearing a bathrobe all the time. When asked why, since no man can see them, they reply: ‘Oh, but you forget the good God.’ Apparently they conceive of the Deity as a Peeping Tom, whose omnipotence enables Him to see through bathroom walls, but who is foiled by bathrobes. This view strikes me as curious.”

有時我會震驚於那些以為自己虔誠的人所做出的褻瀆行爲——例如，修女們永遠不會在沒有穿著浴袍的情況下洗澡。當被問及，既然沒有人能看到她們，為何還要如此做時，她們回答：「噢，但你忘了善良的上帝。」明顯地她們認為神是個偷窺狂，祂的全能讓祂看穿浴室的牆壁，卻被浴袍擋住。這種看法令我驚奇。

b. The following passage was written by B. Pascal, the philosopher and mathematician. Why does Pascal think that it is rational to believe in God’s existence and to live a Christian life? Do you find his reasoning convincing? Why or why not? (You can use standard form to write down Pascal's argument.)

“Either there is a Christian God or there isn’t. Suppose you believe in His existence and live a Christian life. Then, if He does exist you will enjoy eternal bliss and if He doesn’t exist you will lose very little. But suppose you don’t believe in His existence and don’t live a Christian life. If He doesn’t exist you will lose nothing, but if He does exist you will suffer eternal damnation! So it is rational and prudent to believe in God’s existence and to live a Christian life.”
上帝存在或者不存在。假設你相信上帝存在並且過基督徒的生活，那麼，如果上帝存在的話你將會享受到永久的幸福，並且如果上帝不存在的話你將會損失很少。但，假設你不相信上帝存在並且不過基督徒的生活，如果上帝不存在的話你將不會有損失，但，如果上帝存在的話你將會受到永久的懲罰！所以，相信上帝存在並且過基督徒的生活是明智的。

3. Creative Thinking

a. How can you take one away from 9 and get 10? Generate as many answers as possible.

b. You stand outside a room which is thoroughly sealed and insulated. Externally, in front of you, there are three switches: only one of these turns the light on inside the room, while the other two do not. You must discover which the working switch is. You may make as many attempts as you want with the external switches, but you may enter the room only once to check your supposition. What would you do? [“Simple Games about Individual Creativity”, http://www.diegm.uniud.it/create/games.htm]
Exercise for Lectures 2 and 3: Creative Thinking and Creative Problem Solving

1. Creative Thinking

   a. Without taking pen off paper, and using only four straight lines, connect the nine dots.

   ![Nine Dots](image)

   b. A farmer has ten trees. Starting with an empty field, he instructs his farmhand to plant these ten trees in five rows of four. It is possible. How?

   c. Four friends have a large garden in the following shape. They want to divide it into four little gardens the same size and shape, but they don’t quite know how to do this. Show them.

   ![Garden](image)


   d. How many uses can you think of for old socks, stockings, or panty hose? Be sure to guard against setting unconscious restrictions on your thinking and to resist the temptation to settle for too few ideas.

   [same as c.]

2. Creative Problem Solving

   e. For each of the following applications, find the best expression of the problem or issue, investigate it as necessary, and then produce as many ideas as you can, applying what you learned in the lectures. Finally state which of your ideas you believe is the best, and briefly explain why. [same as c., p.322-323.]

   i. In some cultures, the elderly are greatly respected and made to feel important. Their views are considered especially valuable because they are formed out of a lifetime of experience. In our culture it is quite different. Most of those over 70 are regarded as having nothing to offer to the society.

   ii. You are the editor of the college newspaper. You have two other staff who limit their work to a few hours a week. To get the paper out each week, you’ve had to spend many more hours than your course load
permits. On several occasions, you’ve stayed up all night and slept through the next morning’s classes. You’ve tried to put ads in the paper to get more staff members, but no one answers them.

iii. Going to the hospital for the first time can be a frightening experience, particularly for small children. Think as many ways as you can to make the children’s ward of a hospital a nontargeting, cheery place.

f. In our everyday lives, we often come across brilliant inventions and products which surprise us both in its usefulness and originality.

i) Use no more than 20 minutes to discuss with your group members on a particular innovation which you find interesting and worth sharing.

ii) Use five to ten minutes to present your findings. You may use drawing, sketches or even brief drama to illustrate the idea, etc.

iii) Your illustration should contain at least the following elements.

1) Identify the background against which the innovation is introduced.

2) Explain characteristic feature of the innovated work or product and state clearly the ways in which it has surpassed its competitors in the market.

3) Evaluate the prospect of the innovation and discuss its potential problems.

iv) Q&A (five minutes): Critically evaluate the presentation of other groups. Give positive suggestions on how the innovation can be improved further.
Exercise for Lectures 4 and 5 Linguistic-conceptual Analysis

1. Please try to specify the meaning and reference of the following expressions.
   a) 抽濕機
   b) 飛馬
   c) Euthanasia

2. Which of the following sentences express a proposition with a truth value?
   a) There are 8 continents on Earth.
   b) Pass me the salt, please.
   c) Do you like scary movies?

3. 指出下面語句可能牽涉哪類語害。解釋你的答案。
   a) 「嘉倫經常都有很多問題，可見他這個人真的很有問題！」
   b) 相士對張太說：「你這個月大概會碰到一些對你頗為重要的人，他們的出現會對你未來的運勢造成一定的影響。」
   c) 「請問你對這場辯論比賽有甚麼看法？」
    「唔，正方應該會盡力提供證據去支持今天的辯題，而反方當然不會坐以待斃。」
   d) 涉嫌貪污的陳經理為自己辯解：「如果你們控告我，公司的運作便會受到影響，客戶的利益便會受到損害，所以基於公眾利益的考慮，你們不應控告我。」
   e) 「你會不會來宿營？」
    「如果我來我便會出現。」
   f) 「邏輯不是萬能的，因爲邏輯解決不到單靠邏輯不能夠解決的問題。」
   g) “How can we make this album a big hit among teenagers?”
    “Well… it’s easy. If we can make the teenagers buy it, it will surely be a big hit!”
   h) “Most speakers come as a pair. Larry is a great speaker. Therefore, he must have a partner.”
   i) “Owen will play against MU tonight. He surely doesn’t want to get injured.”
   j) “How heavy is Wednesday?”
Exercise for Lecture 6 Deduction I: Recognizing Arguments and the Difference between Deductive Arguments and Inductive Arguments

1. Which of the following are statements? Which are not? Can you explain why?

i. 「你! 你! 你! 你真是個沒有良心的人!!」

ii. 「董建華是中華人民共和國香港特別行政區的行政長官」

iii. 「1+1=2」

iv. 「預測未來幾日大致天晴，但局部地區會有驟雨」

v. 「不準亂丟垃圾，違者罰款二千」

vi. 「爸爸問小明：『你為甚麼每次考試都這麼低分？』」

2. Determine for each passage below whether it contains an argument. If yes, rewrite the argument in standard form.

i. He was hit by the car because he was blind.

ii. Many of the world’s greatest philosophers were bachelors. For instance, Descartes, Locke, Hume, and Kant were all unmarried.

iii. If it is raining, then the street is wet.

iv. Mary was late for the lecture because she got up late.

v. If it rains, then the picnic will be cancelled. It will rain tomorrow, so the picnic will be cancelled.

vi. Children should not be taught not to steal because there is a rule against stealing. They should be taught not to steal because stealing is wrong.

vii. Peter was late for the meeting because he arrived 10 minutes after the start time.

3. Determine for each passage below whether it contains an argument or an explanation.

i. The rate of unemployment falls this year because the economy has improved.

ii. You need to pay the membership fee because every member should pay and you are our member.

iii. The department store was crowded with people because there was a big sale.

iv. Jenny must be very unhappy. I am sure about this because whenever she is unhappy she eats a lot of chocolate, and she has just brought a full bag of chocolate home.

v. Because of global warming, worldwide flooding is becoming more severe
year after year.

vi. 由於德華極之懶惰，在考試前又只顧玩電腦，結果他考試不合格。

vii. 如果丁次吃飽了便不會再去超級市場。你看他現在去超級市場，他一定是吃不飽了。

viii. “John is not at home because he is giving a lecture now.”

ix. Euthanasia (安樂死) should never be allowed, because once it is legalized, it would lead to many involuntary deaths.

x. China is larger than Brazil, and Canada is larger than Brazil, so Canada is larger than China.

xi. 昨天三時在公主道發生嚴重交通意外，三死五傷。當時天雨路滑，能見度極低。

xii. Because light moves at a finite speed, looking at objects that are millions of miles away is actually looking at light that was emitted many years ago.

xiii. 鯨魚是動物，小鯨魚是小動物。

xiv. 馬英九生活節檢，所以他不會在特別費的使用上有不良的意圖。

xv. 徐步高不是這件案件的兇手，因為案發當日他並不在場。

4. Determine for each argument below whether it is deductive or inductive.

i. As far as I know, David, his brothers and his sister all love the TV series Prison Break III. Therefore, it is likely his whole family, including his parents, love the series.

ii. Dogs are put to sleep (人道毀滅) when they become too old or too sick to enjoy life further. Similarly, human beings should be mercifully put to death when they become too old or too sick to enjoy life further.

iii. Johnny weighs 200 pounds. Stephen weighs 150 pounds since he weighs exactly 25% less than Johnny does.

iv. Nearly all university students in Hong Kong have an MP3. Simon is a university student, so Simon has an MP3.

v. In a random survey of primary school students, 67 out of 100 are overweight, so approximately 70% of primary school students are overweight.

vi. All men are black. Andy Lau is a man. Therefore Andy Lau is black.
vii. Either spiders are insects, or spiders are reptiles. Spiders are not insects, so spiders are reptiles.

viii. 所有超現實主義畫家都受佛洛伊德的精神分析理論影響，而達利是一個超現實主義畫家，所以他都受佛洛伊德的精神分析理論影響。

ix. 很多娛樂圈中人都被狗仔隊追訪過，而方大同是娛樂圈中人，所以都應該被狗仔隊追訪過。

x. 如果你沒有犯事，就不會被人罰；現在你被人罰，不就證明了你有犯事！
Exercise for Lecture 7 Deduction II: Validity and Soundness of Deductive Arguments

1. Analyze the following arguments and determine whether they are valid or invalid.
   i. Singapore is smaller than Hong Kong. Macau is not bigger than Hong Kong. Therefore, Macau is not bigger than Singapore.
   ii. To be a successful soccer player, one must be able to run fast. Lionel Messi runs very fast. Therefore, it is certain that Messi is a successful soccer player.
   iii. As sound arguments have true conclusions, all arguments with true conclusions are sound arguments.
   iv. Peter goes to work either by taking the MTR or by driving his own car. This morning the MTR was not in service, but Peter was on time for work. Therefore, Peter drove to work this morning.
   v. “就目前警方正式落案起訴趙錢孫的成績看來，我肯定警方已掌握足夠證據。因為如果警方沒有足夠證據，是不會落案起訴他的。”
   vii. 若張先生不愛陳小姐，就不會送鑽石戒指給她。張先生是真心愛陳小姐的；所以，他會送鑽石戒指給她。
   viii. “我不會中今期的六合彩，因爲我並沒有預先知道今期六合彩開甚麼號碼；如果我預先知道便不同了。可惜!”

2. Analyze the following arguments and determine whether the following deductive arguments are sound or unsound. If they are unsound, please specify whether they are invalid or contain false premises, or both.
   i. 所有大學教授都是人類。
      愛恩斯坦是人類。
      愛恩斯坦是大學教授。
   ii. 所有中國女排的球員皆是外籍人士。
      香港歌手陳奕迅是中國女排的球員。
      香港歌手陳奕迅是外籍人士。
   iii. Reptiles lay eggs to reproduce. Fish belongs to the family of reptiles, so fish lays eggs to reproduce.
iv. If you are 18 or above, you are allowed to drink in public bars in Hong Kong. You can’t drink in public bars in Hong Kong, so you must be below 18.

3. Choose the right answer.

i. “I am not going on a picnic in the rain.”
Raining is _______________ condition for my not going on a picnic.

   a) a necessary
   b) a sufficient
   c) a necessary and sufficient
   d) neither a necessary nor a sufficient

ii. 工欲善其事，必先利其器；即使利其器，未必善其事。
善其事是利其器的_____________条件。

   a) 必要而非充分
   b) 充分而非必要
   c) 必要和充分
   d) 既非必要，亦不充分

iii. 工欲善其事，必先利其器；若能利其器，即可善其事。
善其事是利其器的_____________条件。

   a) 必要而非充分
   b) 充分而非必要
   c) 必要和充分
   d) 既非必要，亦不充分

4. Answer the following questions:

   i. All plants need water to survive, but sunshine is equally important to plants. What is the relation of water to plant survival?

   ii. John says to himself: “If I win the lottery this time, I will be able to travel around the world.” But John’s brother, Joe, traveled around the world last year because he was elected the “friendship ambassador” by the Tourist Association. What would be the relationship of winning the lottery and traveling around the world?

   iii. Beauty does not always guarantee happiness, and happiness does not really depend on beauty. What is the relationship between beauty and happiness?
Exercise for Lecture 8  Deduction III: Categorical Logic

1. Please rewrite the following statements into categorical statements in standard form.

i. Something that is difficult needs our attention.

ii. Only HKCC students are invited to the party.

iii. No one looks philosophical unless he is pale.

iv. Some historians are extremely gifted writers whose works are like first-rate novels.

v. Some members of families that are rich and famous are not persons of either wealth or distinction.

vi. 傑米不喜歡足球運動。

vii. 創意人人都有。

viii. 並非有鬍鬚的就是为人父者。

2. Please rewrite the following categorical syllogisms into standard form. Then use Venn diagrams to test the argument for their validity.

i. All dogs are mammals. All cats are mammals. Therefore, all cats are dogs.

ii. All artists are egotists. Some artists are very poor. Therefore, some very poor people are egotists.

iii. All great scientists are college graduates. Some professional athletes are college graduates. Therefore, some professional athletes are great scientists.

iv. Some reformers are fanatics, so some idealists are fanatics since all reformers are idealists.

v. All underwater boats are submarines; therefore, no submarines are pleasure ships since no pleasure ships are underwater boats.

vi. No weak-minded people are political leaders because no weak-minded people are true liberal thinkers, and all political leaders are true liberal thinkers.
vii. Some teachers have unfailing passion. No teachers are non-intellectuals. Therefore, some intellectuals have unfailing passion.

viii. No one present is out of work. No members are absent. Therefore, all members are employed.

ix. No one who is a Nobel Prize winner is a rock star. A number of economists are Nobel Prize winners. Therefore, a number of economists are not rock stars.

x. At least one lawyer is not a golfer. Only persons who have attended law school are lawyers. So, at least one person who has attended law school is not a golfer.

xi. Some philosophers are mathematicians; hence, some scientists are philosophers since all scientists are mathematicians.

xii. No weaklings are labour leaders because no weaklings are true liberals, and all labour leaders are true liberals.

xiii. 不是每個謊話都有道德問題。因為有很多無傷大雅的行爲在道德上沒有問題，而有些謊話本身就是無傷大雅的。

xiv. 所有藝術家都是自利主義者。但由於藝術家之中不乏抑鬱症患者，故抑鬱症患者之中有的是自利主義者。

xv. 最少有一個相信宙斯神話的人是熱愛田徑運動的。只有古希臘人才會相信宙斯的神話。所以，古希臘人當中必定有些是熱愛田徑運動的。

xvi. 逃稅就是違反法紀。由於沒有一個違反法紀的人可以稱得上是模範市民，所以沒有一個模範市民會逃稅。

**Exercise for Lecture 9: Induction**

**Analogical Argument**
1. 請找出下述類比論證的主要項, 類比項和目標性質.

i. “To consider the Earth as the only populated world in infinite space is as absurd as to assert that in an entire field of millet (小米的穀粒), only one grain will grow.” Metrodorus of Chios, a philosopher who lived in the fourth century B. C.

ii. 玉不琢, 不成器; 人不學, 不知理。

iii. 世上那有懷才不遇這回事。人才就如錐之在囊。任何人若真有才能，總會如銳錐破囊而出，而不會被白白埋沒。

**Inductive Generalization**
2. 小明、小娟、老李和彼得都是吸煙人士，而小明、小娟和老李都先後患上了肺癌。
   結論: 吸煙很大機會導致肺癌。

請問假如以下的事件各自獨立成為前提的一部份, 會如何影響結論的可信性？

(1) 假如小明, 小娟和老李都有親屬關係  
(2) 假如彼得最後都患了肺癌  
(3) 假如小明和小娟都在核能發電站上班  
(4) 假如小明和老李都很喜歡看劉德華的電影

2. 世界衛生組織為亞洲, 歐洲及美洲的一萬隻候鳥作了檢查, 發現全都沒有禽流感。所以,相信全球的候鳥都已經不帶有禽流感病毒。

請問假如以下的事件各自獨立成為前提的一部份, 會如何影響結論的可信性？

(1) 假如世衛只對雄性的候鳥進行了檢查  
(2) 假如全球候鳥總數在一千萬隻以上  
(3) 假如世衛也對非洲及澳洲的候鳥作了同樣的檢查, 而且結果相同  
(4) 假如所有檢查都在人口密度高的城市附近進行的  
(5) 假如有歷史學家發現十七世紀的土以其曾出現過大量的鴿鳥屍體
Exercise for Lecture 10  Fallacies I
指出下面語句可能牽涉哪種謬誤。解釋你的答案。

1. 「我已經幾天沒有放過任何東西進肚子，只是昨天吃了自助餐而已。」

2. 小明：「我完全不懂中文。」

3. 經理：「由於你有近視，根據本公司的政策，我們不能聘請你。」
應徵者：「但剛才那位小姐也有近視你們不是也聘請她？」
經理：「唔.....因爲她打字的速度很快。」
應徵者：「但我明明打字比她更快！」
經理：「唔.....總之你有近視，我們便不能聘請你，請你回去吧！」

4. 「偉明樣貌極醜，又有體臭，他說阿貴偷了錢，很明顯阿貴是清白的。」

5. 「陳教授在文學界享負盛名，連他也說風水可信，可見風水是可信的。」

6. “As a member of the society, we should help the needy.”
“I don’t think socialism is a viable option.”

7. 媽媽：「你這一次測驗的成績為甚麼這麼差？」
兒子：「現在讀書真艱難啊！科目多，參考資料一大堆，還要參加課外活動。我很多同學還要補習，日子真的不容易過啊！」
Exercise for Lecture 11 Fallacies II

1. “The mp3 player, which is defective, is made in China. Therefore, I am sure that all electronic products made in China are defective.”

2. 「這首歌的每一句歌詞都寫得很優美，必定是一首好歌！」

3. 「這幢大廈是全香港最大的，可想而知它的單位也是全港至大。」

4. 「今次的考試準備得怎樣？」
   「非常好，只要不要考試之前聽到華仔的歌便沒有問題。」
   「哇？你在說甚麼？」
   「我每次考試前只要聽到華仔的歌，便至少會碰到一條完全不懂的題目。」

5. “As long as Danny abides by the regulations, he will not be punished. He has never been punished, so he always abides by the regulations.”

6. 靜宜問她三歲大的兒子：「你偷的糖果好吃嗎？」

7. 「這部暖風機十分安全，因為它一點也不危險。」

8. 「他不接受資本主義，可見他是馬克思主義者。」
Suggested Answers to Selected Questions

Exercise for Lectures 4 and 5

3.
   a. 概念混淆
   b. 語意虛浮
   c. 相對空廢
   d. 概念扭曲
   e. 絕對空廢
   f. 絕對空廢
   g. 絕對空廢
   h. 概念混淆
   i. 相對空廢
   j. 語意錯亂

Exercise for Lecture 6

1. (v) a command – not a statement
   (vi) a question – not a statement

Exercise for Lecture 7

1. (i) invalid; (iv) valid; (viii) invalid (denying antecedent)
2. (ii) unsound – false premises
3. (i) sufficient; (ii) b. 充分非必要; (iii) c. 必要和充分
4. (i) necessary but not sufficient; (ii) sufficient but not necessary
Exercise for Lecture 8

ii. All people invited to the party are HKCC students.

vii. 所有人都是有創意的人。

Exercise for Lecture 9

Analogical Argument

1.iii 
主要項: 人材
類比項: 錐
目標性質: 被發現

Inductive Generalization

2.
(1) 減低
(2) 增加
(3) 減低
(4) 無關

3.
(1) 減低
(2) 減低
(3) 增加
(4) 減低
(5) 無關

Exercise for Lecture 10

1. Self Contradiction 自相矛盾

2. Self Defeating 自我推翻

3. Double Standard 雙重標準

4. Argument Ad Hominem 人身攻擊

5. Appeal to Inappropriate Authority 僞托權威

6. Attacking a Straw Man 刺稻草人
7. Red-herring 轉移視線

Exercise for Lecture 11

1. Hasty Generalization 以偏概全
2. Composition 合成
3. Division 分割
4. Post hoc Fallacy 居後為果
5. Affirming Consequent 肯定後項
6. Complex question 混合問題
7. Begging the Question / Circular Argument 乞求論點 / 循環論證
8. False Dilemma 假兩難
Creative and Critical Thinking CC2002 2009/2010 Semester One

Guidelines for Group Assignment One

Group Project on Creative Problem Solving

**Expected Learning Outcomes:**

- Understand the importance of thinking skills in everyday life.
- Appreciate existing thinking habits, mental blocks and attitudes that hinder people from being creative and critical.
- Be aware of the different types of thinking, how they complement each other and how they can be applied in everyday life.
- Develop the attitude and techniques for creative problem solving.
- Acquire the basic skills for working in innovative problem solving teams.

(I) The Group Project

To demonstrate your knowledge of creative innovation, you are required to form a group of four or five members and present a project on creative problem solving. While preparing the project, you need to:

1. Explain the environment in which you identify a possible case for creative innovation.
2. Identify the problem that you see in a particular practice.
3. Report the thinking process through which you arrive at the present solution.
4. Introduce your solution and clearly state the way in which it is an improvement over the old practice.
5. Evaluate the prospect of success and discuss the innovation’s potential problems.

- In elaborating your solution, you may use pictures, drawings or storyboards to help illustrating your points.
- Remember that you should provide your own case. Borrowing ideas from other sources is strictly forbidden.

(II) Stages of Development

To facilitate your preparation for the project, we have designed three stages for your group to submit your works.

(1) Stage One: Progress Report (Week 7)
Students need to form a group of four to five members. They need to brainstorm ideas and provide the lecturer with a draft report in week 7.
The draft report will consist of a sketch of ideas, usually with simple and pictorial explanation of the innovation that students have in mind.

Example:

First page – Written Explanation of the Project and Details of the Tutorial Members

<table>
<thead>
<tr>
<th>Tutorial Group</th>
<th>104A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time and date of tutorial</td>
<td>(Thu) 10:00 - 10:55a.m.</td>
</tr>
<tr>
<td>Venue</td>
<td>315</td>
</tr>
<tr>
<td>Group members list (student no.)</td>
<td></td>
</tr>
<tr>
<td>張詠詩 Cheung Wing Sze (0700XXXXA)</td>
<td></td>
</tr>
<tr>
<td>陳慧珠 Chan Wai Chu (0702XXXXA)</td>
<td></td>
</tr>
<tr>
<td>羅國揚 Law Kwok Yeung (0702XXXXA)</td>
<td></td>
</tr>
<tr>
<td>黃碇淘 Wong Ting To (0701XXXXA)</td>
<td></td>
</tr>
<tr>
<td>Mobile contact number</td>
<td>6100 XXXX</td>
</tr>
</tbody>
</table>

我們設計的產品是將磁石應用於餐具器皿之上。

可行性：現今科技範圍內可辦到。生產成本不高，售價能切合大眾化的價錢。在繁忙的香港都市生活中，減少麻煩的產品亦是市場一大需求之一。

實用性：能協助小朋友培養自己進食的習慣，並減少小朋友打翻器皿，浪費食物的機會，從而減少當中所帶來的清潔問題和麻煩。操作簡單。

創新性：本產品巧妙地運用磁鐵相吸的特性固定器皿位置，並以簡單的操作，依情況自由控制磁性的運用。將現有的普及科技融入日常用品之中，改善生活質素。

隨附上兩張產品構想圖，
Students are required to submit the report ON TIME. The report has to be sufficiently informative, giving the lecturer a clear idea of what students’ innovative plan is about.

The Progress Report may be submitted to the lecturer through email or other means. Students need to seek the lecturer’s approval of the report. NO PRESENTATION IS ALLOWED WITHOUT LECTURER’S PRIOR APPORVAL OF THE RELEVANT PROGRESS REPORT. Students are not supposed to change idea at the stage of presentation.

The Progress Report, thus, will be marked according to:

- Punctuality
- Clarity
- How informative the report is (e.g. whether the group provides enough information about the students’ name, tutorial date, contact number, etc.)

Note that students from different groups will get similar grade at this stage. Students are allowed to change idea and submit an additional progress report to the satisfaction of their lecturers. Marks will not be given based on the quality of the innovative idea until the project reaches the presentation stage.

Mark distribution of Progress Report: 5% of your coursework
(2) Stage Two: Presentation of the Project (In the Tutorials of Week 10 to 12)

- You have to strictly follow the five steps that we identified for you in Part I of this guideline. **You are encouraged to use models, visual aids, pictures, etc. to demonstrate your innovation.** A well-prepared demonstration of your innovation with videos, models or other material means will gain extra credit.
- You should prepare copies of the brief outline of your presentation for your audience.
- Each of you should participate in the oral presentation of your project.
- The presentation of each group will last for 15 minutes and the discussion thereafter will last for about 5 minutes.

**Dates of Presentations: Week 10 to 12**  
**Evaluation Mechanism:**  
The presentation will be assessed on the basis of the following criteria:  
**Mark distribution of Presentation: 15% of your coursework**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Originality of the Ideas, and Practicality of the Innovation Effectively Shown in the Presentation</td>
<td>40%</td>
</tr>
<tr>
<td>Presentation Skills</td>
<td>30%</td>
</tr>
<tr>
<td>Preparation</td>
<td>10%</td>
</tr>
<tr>
<td>Level of Cooperation among the Group Members</td>
<td>10%</td>
</tr>
<tr>
<td>Responses to Questions</td>
<td>10%</td>
</tr>
</tbody>
</table>

(3) Stage Three: Written Report (Within 10 days after the Presentation)

The written report should consist of a brief description of the innovative product, with (preferably) colorful demonstration of the structure of the product and a brief explanation of how it works. MOST IMPORTANT OF ALL, students need to rethink their innovation and respond to the challenges that lecturers and their classmates raised in the Q&A session of the presentation.

**How long should you write?**

The length of the project should be less than 2000 words. You should try to express your ideas in a concise manner.  
**Format of the Project**

*Language: Either Chinese or English, no mixture of different languages.  
Font Type: Times New Roman*
You should make sure that the cover page of your project contains the names and student numbers of your group members.

**Marking Criteria for this assignment:**

**Mark distribution: 10% of your coursework**

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Mark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Your Response to the Comments and Suggestions of the Lecturer and of Your Fellow Students</td>
<td>40%</td>
</tr>
<tr>
<td>(e.g. Did they give useful comments? How would you improve your product? Was the discussion session useful in helping you to rethink the limits and focuses of your product?)</td>
<td></td>
</tr>
<tr>
<td>Clarity in the Language and Organization of the Ideas of the Written Report</td>
<td>40%</td>
</tr>
<tr>
<td>(e.g. How well have you expressed the arguments in defence of your idea in the report?)</td>
<td></td>
</tr>
<tr>
<td>Presentation of the Report</td>
<td>20%</td>
</tr>
<tr>
<td>(e.g. Have you added colourful pictures to show the structure of your product? Have you printed the report clearly and presented it in a tidy manner?)</td>
<td></td>
</tr>
</tbody>
</table>
Find ONE example for each of the language traps discussed in lecture 5 from the media. Clear and concise explanations are required. Use ONLY Chinese or English for the whole assignment. You should use no more than 100 words for each example.

<table>
<thead>
<tr>
<th>Language Traps</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>語意曖昧 (Obscurity in Meaning)</td>
<td></td>
</tr>
<tr>
<td>言辭空廢 (Vacuous Expression)</td>
<td></td>
</tr>
<tr>
<td>概念滑轉 (Conceptual Deflection)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mark: / 33</th>
<th>No. of words ( )</th>
</tr>
</thead>
<tbody>
<tr>
<td>33</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mark: / 33</th>
<th>No. of words ( )</th>
</tr>
</thead>
<tbody>
<tr>
<td>33</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mark: / 33</th>
<th>No. of words ( )</th>
</tr>
</thead>
<tbody>
<tr>
<td>33</td>
<td></td>
</tr>
</tbody>
</table>
Points to note:

- Due date: Week 10 (Tutorial)
- Expected Learning Outcomes:
  - Understand the importance of thinking skills in their everyday life
  - Appreciate their existing thinking habits, mental blocks and attitudes that hinder them from being creative and/or critical
  - Develop the attitude towards and techniques for creative problem solving
- Marks will be given according to
  - Appropriateness of the examples (40%)  
  - Do not make up your own examples.
  - Examples must be taken from the media, e.g. magazines, newspapers, TV, radio, etc.
  - The sources of your examples must be quoted.
  - Cases mentioned in lectures or tutorials are NOT acceptable.
  - Accuracy and clarity of the descriptions and explanations (50%)  
  - Explain clearly how your example involves the language traps supposed to illustrate.
  - Explain clearly why and how your example is confusing and misleading even after its context has been properly considered.
  - Format (10%):  
  - Marks will be deducted if you
    i) do not specify the sources of your examples
    ii) use more than 100 words (specification of the sources is not included) for your example.
  - Timeliness of submission (Late submission is liable to a penalty of 10% of the available marks for the whole assignment for each day late.)
  - N.B. marks may be deducted if the guidelines set out above are not compiled with.

- Hand-in methods: both Hardcopy and Softcopy via Moodle.
  a. Hardcopy submission:  
  - You should hand in the assignment in the tutorial.
  b. Softcopy submission:  
  - Save your assignment as a Word Document with the file name as tutorial group_yourname_StudentID.doc.
    e.g. 109A_Chan Chi Ming_07034671a.doc
  - Please submit the softcopy of your assignment to Moodle by 17:00 on the due date.

- It is an individual assignment. No plagiarism is allowed.
Appendix 1: Examples & Explanations of Unacceptable Cases on Assignment Two

語意曖昧

個案一

例子：明白同學對經營生意的經驗有限，難以要求他們憑空準確預測計劃書的可行性。

解釋：「預測」的意思是對一些事情作出估計，而作出估計即不一定準確。而要準確地預測是不可能的，令人覺得不可理解。

評語：
語意曖昧是指語辭的語文意義過少，即使真的不可能作出準確預測，亦跟語意曖昧無關。而且要準確地作出預測根本不是不可能，同學的說明才是令人不可理解。

個案二

例子：陳太又指，現時社會上有很多熱心人士均樂意捐款，現時社會經濟狀況良好，但在不少因政治正確而選擇把款項捐往內地，認為他們應在本地捐獻。

解釋：語意錯亂：政治和正確本身各有意義，但「政治正確」合起來便沒有意義。

評語：
- 「政治正確」是一個有意義的日常用語
- 同學欠常識才會作出錯誤的判斷
- 同學應注意不要把自己不懂的詞彙皆當成有語意錯亂的問題
語意錯亂

個案三

例子：「將北京奧運送達終點，誰在鼎力相助？」

解釋：語意錯亂
「北京奧運」與「送達終點」有其各自的意思，但「將北京奧運送達終點」卻沒有任何意義。這句句子把言辭胡亂配搭，語無倫次，不可理解。

個案四

例子：「廣告：位元堂養陰丸，好似太陽咁溫暖」

解釋：語意錯亂
養陰丸是一種調理身體的內服藥物，「好似太陽咁溫暖」是對溫暖這種感覺的描述。兩詞組各有意義。
但養陰丸本身祇是一種死物，且不能溫暖發熱，因此所組成的詞組令人難以理解。

評語：
- 語意錯亂這一種語言陷阱，並不可以用在描述文學作品之上。語意錯亂之所出現，是因為講者企圖直接描述客觀世界，但所使用的字詞，卻與世界的事態欠缺對應關係。
- 在上文的兩個例子，並沒有語意錯亂。因爲原作者是意圖以文學手法表達信息，故在言辭配搭上會容許很大的彈性，不容易出現語意錯亂的問題。
### 言辭空廢

#### 個案五
例子：問佢使咗幾多錢買車？佢話：「佢喺我心目中係無價，我花咁多心機幫佢裝身，有時好掛住佢。」

解釋：
相對空廢
發問者問汽車的價錢，但答案卻是「無價」。**答案對事實沒有描述，信息量不足以令人獲得實質資訊。**

評語：
- 回答「無價」最多只是顧左右而言他，作出不相干的回應
- 而相對空廢是指當被別人要求提供事實資料時，只是提出一些雖然相關但人盡皆知因而沒有實質內容的陳述
- 如果答案是「每一部車都它的價錢」便犯了相對空廢的語害

#### 個案六
例子：<科學說需求>：特殊理論也是理論，不過因為過於特殊，一般性的解釋能力就談不上。

解釋：
當中是重言，**不足以獲得任何實質信息**，特殊理論已可知是理論和特殊，因這句子沒有經驗信息內容，且必然是真的，是絕對空廢的例子。

評語：
- 不是任何時候用重言句都是犯了絕對空廢
- 只有當用重言句來提供經驗信息時才算犯了絕對空廢
- 引文是關於特殊理論的闡釋說明，即使運用到重言句不一定有問題
- 同學對引文的分析亦有斷章取義之嫌，原文對「特殊理論」分析不只這一句
個案七
例子：「收音機, 仍沒有先進得有字幕啊.」

解釋：絕對空廢
這是一定真的概念命題, 因為收音機是利用大氣電波, 傳遞聲音信息, 而字幕則因利用熒光幕來把文字顯示出來. 若能顯示字幕跟聲音的, 那便是電視機了. 故此, 要判斷上述例子的性質, 並不需要經驗觀察, 只要理解意思, 即可知其為必然真.

評語:
- 個案的引文太短, 上文下理交待不清
- 欠缺相關語境, 則不能理解有關陳述是否在表面上有企圖傳遞信息
- 而且, 收音機會不會先進得能顯示字幕, 是關乎經驗內容的事實. 故上述個案的句子並非必然地真
## 概念滑轉

### 個案八

例子：他表示，不同意前線警員冷待報案的鳳姐。

解釋：這裡的「不同意」有不同解釋，即歧義。這句可解作他表示，不認同前線警員冷待報案的鳳姐這個行為，又可以解作他不認為前線警員有冷待報案的鳳姐這個情況。

評語：
- 有歧義不一定有概念混淆的問題
- 同學的分析有斷章取義之嫌
- 雖然孤立地看這個句子容許有上述的兩種解讀方式，但從整篇文章的前文後理是可以確定文句的意義，因此不算概念混淆

### 個案九

例子：「曾財神」今日將發表其任內首份財政預算案，高達一千一百億的盈餘將如何「派糖」。

解釋：概念扭曲：在這裡的曾財神是指財政司司長曾俊華而並非是傳統的財神，而派糖的意思是發放盈餘，並非派糖。

評語：
- 概念扭曲是指在沒有理據的情況下，賦予某一概念本身沒有意義與用法，以造成蒙混誤導的效果
- 以「財神」與「派糖」來指「財政司司長」與「發放盈餘」本身是一種修辭比喻的手法，而且已經為一般香港人理解
- 由於並非带有蒙混性的歪曲詞性，因此不算概念扭曲
個案十

例子: 靚靚甘肅起水窖功成身退，小方山區打水嘗盡「失明」苦

解釋: 概念混淆
文中描述藝人探訪甘肅，因爲在山區打水的過程實在太黑，所以才會說是受失明之苦，但在這裡，失明並不是指當事人以後也不能再看見東西的意思。由此可見，失明二字有語意歧義。

評語:
- 原文用了括號，已經意味著是特殊用法。即是說，原作者利用括號來告訴讀者，他有意引申「失明」二字的意義在此語境下使用
- 既是特殊用法，亦沒有混淆讀者的意圖。故無歧義，亦非語言陷阱

個案十一

例子：麥浚龍說：「呢幾日無同佢通電，呢幾日要飛，無聯絡。」

解釋: 概念混淆
「飛」一字在此帶有蒙混性，妨礙正確思考。「飛」泛指在天空飛翔，但此處卻帶有歧義，為坐飛機或起飛到別地的意思。使讀者產生混淆，誤以爲麥浚龍在天空飛翔。

個案十二

例子: 有關醫療融資方案：「市民看似有選擇，實質是沒有選擇。...最終都是向市民開刀，加重市民的經濟負擔。」

解釋: 概念混淆
「開刀」一詞本身有兩個意義，一是指爲病人做手術，另一個是指將人當作犧牲品。容易令人產生混淆。

評語:
- 在日常用語中，具有一詞多義的字詞多不勝數，但其存在並不會馬上為語言使用者帶來麻煩，因爲在一般情況下，對話雙方都可以從語境判斷有關字詞的含意是甚麼
- 在上文，關於有關的語境已可判斷有關字詞的意義是指甚麼，除非是故意誤解，否則沒有任何誤導成份可言
Vocabulary Bank
Prepared by Ludwig Ying

A) Linguistic-Conceptual Analysis 語理分析
1. Meaning 意義
2. Reference 指稱
3. Sentence 語句/句子
4. Proposition 命題
5. Statement 陳述句/述句
6. Context 語境
7. Ambiguity 肆義

B) List of Language Traps: （語害）
1. Obscurity in Meaning 語意曖昧
   1.1. Unsubstantial Meaning 語意虛浮
   1.2. Disordered Meaning 語意錯亂

2. Conceptual Deflection 概念滑轉
   2.1. Conceptual Confusion 概念混淆
   2.2. Conceptual Distortion 概念扭曲

3. Vacuous Expression 言辭空廢
   3.1. Relative Vacuity 相對空廢
   3.2. Absolute Vacuity 絕對空廢

C) Deductive Reasoning 演繹推理
1. Inference 推理
2. Argument 論證
3. Premise 前提
4. Conclusion 結論
5. Standard Form 標準式
6. Reason 理由
7. Cause 原因
8. Explanation 解釋
9. Necessity 必然性
10. (Logical) Possibility (邏輯的)可能性
11. (Empirical) Probability (經驗的)概然性
12. Validity 對確性；Valid 對確；Invalid 不對確
13. Soundness 真確性；Sound 真確；Unsound 不真確
14. Logical form 邏輯形式
15. Formal logic 形式邏輯
16. Conditional Statement 條件述句
17. Antecedent 前項
18. Consequent 後項
19. Sufficient Condition 充分條件
20. Necessary Condition 必要條件
21. Disjunctive Statement 選言述句
22. Affirming Antecedent（Modus Ponens）肯定前項
23. Denying Consequent（Modus Tollens）否定後項
24. Hypothetical Syllogism 假設三段論
25. Categorical statement 定言述句
26. Quantifier 量詞
27. Subject Term 主詞
28. Predicate Term 議詞
29. Copula 繫詞

1. A述句：全稱肯定述句（universal affirmative statement），
標準式：All S are P 所有 S 是 P
2. E述句：全稱否定述句（universal negative statement），
標準式：No S are P 沒有 S 是 P／所有 S 不是 P
3. I述句：特稱肯定述句（particular affirmative statement），
標準式：Some S are P 有些 S 是 P
4. O述句：特稱否定述句（particular negative statement），
標準式：Some S are not P 有些 S 不是 P

30. Major Term (P) 大詞
31. Minor term (S) 小詞
32. Middle term (M) 中詞
D) List of Fallacies: (謬誤)

1. Fallacies of Inconsistency 不一致的謬誤
   1.1. Self Contradiction 自相矛盾
   1.2. Self Defeating 自我推翻
   1.3. Double Standard 雙重標準

2. Fallacies of Irrelevance 不相干的謬誤
   2.1. Argument Ad Populum 訴諸群眾
   2.2. Argument Ad Hominem 人身攻擊
   2.3. Appeal to Inappropriate Authority 僞托權威
   2.4. Strained Analogy 牽強比附
   2.5. Smuggling a fake subject 偷換論題
       a) Attacking a Straw man 刺稻草人
       b) Red-herring 轉移視線
   2.6. Fallacies of Ambiguity 歧義謬誤

3. Fallacies of Insufficiency 不充分的謬誤
   3.1. Hasty Generalization 以偏概全
   3.2. Accident 以全蓋偏
   3.3. Composition 合成
   3.4. Division 分割
   3.5. Post hoc Fallacy 居後為果
   3.6. Denying Antecedent 否定前項
   3.7. Affirming Consequent 肯定後項
   3.8. Appeal to Ignorance 訴諸無知

4. Fallacies of Inappropriate Presumption 不當預設的謬誤
   4.1. Complex question 混合問題
   4.2. Begging the Question / Circular Argument 乞求論點 / 循環論證
   4.3. False Dilemma 假兩難
E) Inductive Reasoning 归納推理
   1. Strong 强
   2. Weak 弱
   3. Cogent 真强
   4. Uncogent 不真强
   5. Inductive Generalizations 归納推廣
   6. Analogical Arguments 類比論證
   7. Sample 樣本
   8. Target Class/Population 群集
   9. Target Object 對象
   10. Primary Subject 主要項
   11. Analogue 類比項
   12. Similarities 相似點
   13. Property of the Target Object 目標性質
   14. Statistical Arguments 統計論證
   15. Reliability 可靠性
   16. Causal Argument 因果論證