



School of Bioinnovation and Bio-based Product Intelligence (SCIN)  
Program in Bioinnovation (International Program, Multidisciplinary Program)  
Course: SCIN 102 Critical Thinking and Decision Making

Degree ☒ Bachelor ☐ Master ☐ Doctoral  
Faculty of Science

|                                     |                                                                                                                                                                                                                                                                                        |
|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Course Code and Course Title</b> | English SCIN 102 Critical Thinking and Decision Making<br>Thai วนวน ๑๐๒ การคิดเชิงวิจารณ์ญาณและการตัดสินใจ                                                                                                                                                                             |
| <b>Number of Credits</b>            | 3 (3-0-6) (Lecture 3 hours – Laboratory 0 hour/week - Self-Study 6 hours/week)                                                                                                                                                                                                         |
| <b>Curriculum and Course Type</b>   | Program of Study Bachelor's Degree Program in Science and Technology<br>(International Program, Multidisciplinary Program)<br>Course Type Major Course                                                                                                                                 |
| <b>Course Coordinator</b>           | Assoc. Prof. Wannapong Triampo, Ph.D.<br><br>Address: Department of Physics, Faculty of Science, Mahidol University<br>272 Rama VI Road, Ratchathewi District, Bangkok 10400,<br>THAILAND<br><br>Tel. 02-201-5770-1 e-mail: <a href="mailto:wtriampo@gmail.com">wtriampo@gmail.com</a> |
| <b>Semester/Year of Study</b>       | Academic Year 2025-26 First Semester (1/2025) / First Year                                                                                                                                                                                                                             |
| <b>Prerequisite</b>                 | None                                                                                                                                                                                                                                                                                   |
| <b>Co-requisite</b>                 | None                                                                                                                                                                                                                                                                                   |
| <b>Day/Time/Study Site Location</b> | Tuesday / 10.30-13.30<br>Faculty of Science, Mahidol University, Salaya Campus (ONLINE)                                                                                                                                                                                                |
| <b>Date of Latest Revision</b>      | 4 August 2026                                                                                                                                                                                                                                                                          |

### Course Learning Outcomes (CLOs)

At the end of course, the students can

- 1.1 Explain how critical thinking and decision making can play role in leaning and living.
- 1.2 Discuss on the case studies or situations in the context of critical thinking and decision making.
- 1.3 Apply critical thinking and decision making in solving problem and/or daily life and learning.

### Course Description

Thinking, logical reasoning, critical thinking, decision making, problem solving, applications of critical thinking and decision making for learning, applications of critical thinking and decision making for living.



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#### Credit hours / trimester

| Lecture (Hours)                  | Additional class (Hours) | Laboratory/field trip/internship (Hours) | Self- study (Hours)            |
|----------------------------------|--------------------------|------------------------------------------|--------------------------------|
| 45 hours<br>(3 hours x 15 weeks) | -                        |                                          | 90 hours<br>(6 hour/ 15 weeks) |

Number of hours that the lecture provides individual counseling and guidance

2 hour / week or student requirement during prescribed date and time

#### Evaluation of the CLOs

| CLO | Teaching method                                                               | Assessment method                                             | Week                  | Percentage |
|-----|-------------------------------------------------------------------------------|---------------------------------------------------------------|-----------------------|------------|
| 1.  | Lecture<br>Project & Problem-based learning<br>Group discussion               | - Midterm                                                     | Throughout the course | 10%        |
|     |                                                                               | - Final examination                                           |                       | 15%        |
|     |                                                                               | - Class attendance, Class participation and behavior in class |                       | 5%         |
| 2.  | Lecture<br>Project & Problem-based learning<br>Group discussion<br>Case study | - Midterm                                                     | Throughout the course | 10%        |
|     |                                                                               | - Final examination                                           |                       | 15%        |
|     |                                                                               | - Class attendance, Class participation and behavior in class |                       | 10%        |
| 3.  | Project-based learning<br>Oral presentation,<br>Group discussion              | - Class project executed without plagiarism                   | Throughout the course | 35%        |

#### Measurement and evaluation

After completion of the evaluation process each student is assigned a criterion-referenced grade (as shown in the table below). Evaluation and achievement will be justifying according to Faculty and University code, conducted by grading system of A, B+, B, C+, C, D and F. To pass this course, student must earn a grade of a least D.

#### The tentative Grade evaluation

| Total Percentage of Evaluation | Below 50 | 50-54.99 | 55-59.99 | 60-64.99 | 65-69.99 | 70-74.99 | 75-84.99 | 85-100 |
|--------------------------------|----------|----------|----------|----------|----------|----------|----------|--------|
| Grade                          | F        | D        | D+       | C        | C+       | B        | B+       | A      |

#### Teaching staff:

| Code | Name                                                     | Email                                                                                                                                    |
|------|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| WT   | Wannapong Triampo<br>R3/1- SC 3 Building N (MUSC-Salaya) | <a href="mailto:wtriampo@gmail.com">wtriampo@gmail.com</a> ,<br><a href="mailto:wannapong.tri@mahidol.edu">wannapong.tri@mahidol.edu</a> |



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## Teaching Schedule 1<sup>st</sup> Semester of Academic Year 2024-5

Tuesday / 10.30-13.30

### Teaching plan

| Week          | Topic                                                                                                       | Teaching methods/<br>multimedia |                                                           | Instructor                        |
|---------------|-------------------------------------------------------------------------------------------------------------|---------------------------------|-----------------------------------------------------------|-----------------------------------|
| 1<br>04 Aug   | Introduction of course discipline and class orientation.<br>What is thinking?<br>What is critical thinking? | 3                               | Think-Pair-Share<br>Game based learning<br>Active lecture | Assoc. Prof.<br>Wannapong Triampo |
| 2<br>11 Aug   | What is decision making?<br>Why is it important?<br>How can we become a good decision maker?                | 3                               | Brain storming<br>Group discussion<br>Active lecture      | Assoc. Prof.<br>Wannapong Triampo |
| 3<br>18 Aug   | Activities for promoting critical thinking skills.                                                          | 3                               | Game based learning<br>Group discussion                   | Assoc. Prof.<br>Wannapong Triampo |
| 4<br>25 Aug   | Critical thinking and problem solving I.                                                                    | 3                               | Problem based learning<br>Group discussion                | Assoc. Prof.<br>Wannapong Triampo |
| 5<br>1 Sep    | Critical thinking and problem solving II.                                                                   | 3                               | Problem based learning<br>Group discussion                | Assoc. Prof.<br>Wannapong Triampo |
| 6<br>8 Sep    | Case studies for promoting critical thinking skills I.                                                      | 3                               | Case based learning<br>Group discussion                   | Assoc. Prof.<br>Wannapong Triampo |
| 7<br>15 Sep   | Case studies for promoting critical thinking skills II.                                                     | 3                               | Case based learning<br>Group discussion                   | Assoc. Prof.<br>Wannapong Triampo |
| 8<br>22 Sep   | Case studies for promoting critical thinking skills III                                                     | 3                               | Project based learning                                    | Assoc. Prof.<br>Wannapong Triampo |
| 9<br>29 Sept. | <b>Midterm examination</b>                                                                                  |                                 |                                                           | Assoc. Prof.<br>Wannapong Triampo |
| 10<br>20 Oct  | Mini project on critical Thinking II.                                                                       | 3                               | Project based learning                                    | Assoc. Prof.<br>Wannapong Triampo |
| 11<br>27 Oct  | From critical thinking to leadership                                                                        | 3                               | Active Lecture,<br>Game-based learning                    | Assoc. Prof.<br>Wannapong Triampo |
| 12<br>3 Nov   | From critical thinking to leadership II                                                                     | 3                               | Active Lecture,<br>Game-based learning                    | Assoc. Prof.<br>Wannapong Triampo |
| 13<br>10 Nov  | Critical thinker and career link I                                                                          | 3                               | Active Lecture,<br>Problem-based learning                 | Assoc. Prof.<br>Wannapong Triampo |
| 14<br>17 Nov  | Critical thinker and career link II                                                                         | 3                               | Active Lecture,<br>Problem-based learning                 | Assoc. Prof.<br>Wannapong Triampo |



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| Week                      | Topic                                          | Teaching methods/<br>multimedia |                                                   | Instructor                        |
|---------------------------|------------------------------------------------|---------------------------------|---------------------------------------------------|-----------------------------------|
| 15<br>24 Nov              | Critical thinking for changing world           | 3                               | Active Lecture, Project-based learning discussion | Assoc. Prof.<br>Wannapong Triampo |
| 16<br>25 Nov<br>(Made up) | Critical thinking for learning and daily life. | 3                               | Active Lecture, Project-based learning            | Assoc. Prof.<br>Wannapong Triampo |
| 17<br>1 Dec               | Final Exam                                     | 3                               |                                                   | Assoc. Prof.<br>Wannapong Triampo |
| Total hours               |                                                | 45                              |                                                   |                                   |

## Teaching Materials and Resources

### 1. Texts and main documents

- The Critical Thinking Community - <http://www.criticalthinking.org/pages/defining-critical-thinking/766>
- Handout distributed in class