**TQF 3 course details**

**Name of higher education institution.** Suan Sunandha Rajabhat University

**Campus / Faculty / Department** Department of Applied Thai Traditional Medicine

College of Allied Health Sciences

**Category 1 General information**

1. **Code and course name**

**ATM 3554 Thai Traditional Pharmacy** 2(1-2-3)

Practicing traditional Thai pharmaceuticals under close supervision According to good methodology for the production of herbal medicines emphasis on the practice of preparing or concocting medicinal herbs methods or tools that are not complicated prescription of drugs Preparation and dispensing of medication according to prescriptions Giving advice on medication use.

**2. Number of credits or number of hours** 2 credits (Theory-Practice-Research: 1-2-3 hours/week)

**3. Course and course type** **3.1 course**   
 Bachelor of Applied Thai Traditional Medicine  
 **3.2 course type**  
 Profession /Basic medical science subjects/ pre-clinical basic subjects

**4. Instructors in charge of the course and instructors**  
 **4.1 responsible teacher**  
 Dr.Narin Kakatum

**4.2 instructor**  
 (1) Dr.Narin Kakatum (2) Kingkeaw jangsawat

**5. Semester/year of study** Semester 2, 3rd Year

**6. Pre-requisite** Thai pharmacy 3

**7. Co-requisites -**

**8. place of study**   
 Room 2202 College of Allied Health Sciences Suan Sunandha Rajabhat University**9. 9. Date of preparation or latest revision of course details May 1, 2022**

**Category 2 Aims and objectives**

**1. Objectives of the course**

To provide students with knowledge and skills on the production of herbal medicines according to good methodologies. emphasis on the practice of preparing or concocting medicinal herbs methods or tools that are not complicated Preparation and dispensing of medication according to prescriptions Giving advice on medication use

**Category 3 lesson plans and assessments**

**1. lesson plan**

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| period | topic / activity | hours | | | instructor | location | outcomes | | method | | | | | | | | Evaluation | | | | | | | | | | |
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| 1 | lecture  - Good and correct guidelines according to pharmaceutical principles in the production of herbal medicines (GMP).  practice  - Visit the pharmaceutical production unit in Thai traditional medicine | 1 | 2 | 3 | Dr.Narin Kakarum | 22042 | 1 (1) | ∙ | √ | √ | √ |  |  |  |  |  | √ | √ |  |  |  |  |  |  |  |  |  |
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| 2 | lecture  - Asked a question, "From studying Thai Pharmacy 1-3, how did you get information about the production of herbal medicines according to good standards (GMP)?" 5 students were randomly assigned to express their opinions.  - Application for permission to register drugs  Practice  - Let the students group together to analyze and explain the principles of herbal medicine production. (GMP) for 10 minutes, randomly asking 3 groups of learners (15 minutes). | 1 | 2 | 3 | Dr.Narin Kakarum | 22042 | 1 (1) | ∙ | √ | √ | √ |  |  |  |  |  | √ | √ |  |  |  |  |  |  |  |  |  |
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| 3 | Lecture   * form of drug production | 1 | 2 | 3 | Dr.Narin Kakarum | 22042 | 1 (1) | ∙ | √ | √ | √ |  |  |  |  |  | √ | √ |  |  |  |  |  |  |  |  |  |
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| 4 | Lecture   * Review drug form knowledge * Powder dosage form | 1 | 2 | 3 | Dr.Narin Kakarum | 22042 | 1 (1) | ∙ | √ | √ | √ |  |  |  |  |  | √ | √ |  |  |  |  |  |  |  |  |  |
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| 5 | Lecture   * Review the knowledge of powder dosage form * Randomly assigned 5 students to express their opinions. * Potion productionPractice   Let the learners practice making the Cinnamon Elemental Liquid | 1 | 2 | 3 | Dr.Narin Kakarum | 22042 | 1 (1) | ∙ | √ | √ | √ |  |  |  |  |  | √ | √ |  |  |  |  |  |  |  |  |  |
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| 6 | lecture - Review the knowledge of the production process of liquid medicine Questions explaining the production process of liquid medicine Randomly assigned 5 students to express their opinions.  - herbal balm,  Practice  - production of balsams, | 1 | 2 | 3 | Dr.Narin Kakarum | 22042 | 1 (1) | ∙ | √ | √ | √ |  |  |  |  |  | √ | √ |  |  |  |  |  |  |  |  |  |
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| 7 | lecture  - Review the knowledge of herbal balm, emulgel sahattara, production of Plai pain ointment. Questions explaining the production of herbal balm, randomly assigned 5 learners to express their opinions.  Practice  - Practice producing Sahattara emulgel, producing Plai pain cream for 30 minutes. Group representatives present (100 minutes).  Service project activities | 1 | 2 | 3 | Dr.Narin Kakarum | 22042 | 1 (1) | ∙ | √ | √ | √ |  |  |  |  |  | √ | √ |  |  |  |  |  |  |  |  |  |
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| 8 | lecture  - Review the knowledge of producing herbal compress balls, herbal soaps Questions explaining the production of herbal compress balls, herbal soaps Randomly assigned 5 students to express their opinions.  - film dosage form  Practice  - film dosage form | 1 | 2 | 3 | Dr.Narin Kakarum | 22042 | 1 (1) | ∙ | √ | √ | √ |  |  |  |  |  | √ | √ |  |  |  |  |  |  |  |  |  |
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| 2 (3) | ∙ |  |  | √ |  |  |  |  |  |  |  |  | √ |  |  |  |  |  |  |  |
| 3 (1) | ∙ |  |  | √ |  |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 (2) | ∙ |  |  | √ |  |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 (1) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 (2) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 (3) | ∙ |  |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 (4) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 (1) | ∙ |  |  |  |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 (2) | ∙ |  |  | √ |  |  |  |  |  |  |  |  | √ |  |  |  |  |  |  |  |
| 5 (3) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 (1) | ∙ | √ |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |  | √ |  |
| period | topic / activity | hours | | | instructor | location | outcomes | | method | | | | | | | | Evaluation | | | | | | | | | | |
| lecture | Practice | sum | lecture | Person (answer questions, quizzes, research) | Small group (discussion, analysis, report) | Presentation of information / work | Demonstration/observ | practice / practice procedures | training | behavioral practice | attendance and participation | perform/submit tasks on time | individual contributions | group performance | presentation | written test | oral examination | practical exam | Observe operations in simulations. | observe the operation in real situation | observed during collaboration (colleagues) |
| 9 | Mid term  Multiple-choice test 30 questions, 2 hours of exam time. You can leave the exam room after 1 hour. |  |  |  | Dr.Narin Kakarum | 22042 | 1 (1) | ∙ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 (2) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 (3) | ∙ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 (1) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 (2) | ∙ |  |  |  |  |  |  |  |  |  |  |  |  |  | √ |  |  |  |  |  |
| 2 (3) | ∙ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 (1) | ∙ |  |  |  |  |  |  |  |  |  |  |  |  |  | √ |  |  |  |  |  |
| 3 (2) | ∙ |  |  |  |  |  |  |  |  |  |  |  |  |  | √ |  |  |  |  |  |
| 4 (1) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 (2) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 (3) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 (4) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 (1) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 (2) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 (3) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 (1) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| period | topic / activity | hours | | | instructor | location | outcomes | | method | | | | | | | | Evaluation | | | | | | | | | | |
| lecture | Practice | sum | lecture | Person (answer questions, quizzes, research) | Small group (discussion, analysis, report) | Presentation of information / work | Demonstration/observ | practice / practice procedures | training | behavioral practice | attendance and participation | perform/submit tasks on time | individual contributions | group performance | presentation | written test | oral examination | practical exam | Observe operations in simulations. | observe the operation in real situation | observed during collaboration (colleagues) |
| 10 | lecture  - Review the knowledge of drug film form randomly for 5 learners to express their opinions.  - Explain the production process of Thai herbal compress balls.  Practice  - Production of compress balls | 1 | 2 | 3 | Kingkeaw jangsawat | 22402 | 1 (1) | ∙ | √ | √ | √ |  |  |  |  |  | √ | √ |  |  |  |  |  |  |  |  |  |
| 1 (2) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 (3) | ∙ |  | √ | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 (1) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 (2) | ∙ |  |  |  |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 (3) | ∙ |  |  | √ |  |  |  |  |  |  |  |  | √ |  |  |  |  |  |  |  |
| 3 (1) | ∙ |  |  | √ |  |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 (2) | ∙ |  |  | √ |  |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 (1) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 (2) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 (3) | ∙ |  |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 (4) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 (1) | ∙ |  |  |  |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 (2) | ∙ |  |  | √ |  |  |  |  |  |  |  |  | √ |  |  |  |  |  |  |  |
| 5 (3) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 (1) | ∙ | √ |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |  | √ |  |
| period | topic / activity | hours | | | instructor | location | outcomes | | method | | | | | | | | Evaluation | | | | | | | | | | |
| lecture | Practice | sum | lecture | Person (answer questions, quizzes, research) | Small group (discussion, analysis, report) | Presentation of information / work | Demonstration/observ | practice / practice procedures | training | behavioral practice | attendance and participation | perform/submit tasks on time | individual contributions | group performance | presentation | written test | oral examination | practical exam | Observe operations in simulations. | observe the operation in real situation | observed during collaboration (colleagues) |
| 11 | lecture  - Review the knowledge of producing herbal balls randomly for 5 learners to express their opinions.  - Describe the process of producing massage oil  Practice  - massage oil | 1 | 2 | 3 | Kingkeaw jangsawat | 22402 | 1 (1) | ∙ | √ | √ | √ |  |  |  |  |  | √ | √ |  |  |  |  |  |  |  |  |  |
| 1 (2) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 (3) | ∙ |  | √ | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 (1) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 (2) | ∙ |  |  |  |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 (3) | ∙ |  |  | √ |  |  |  |  |  |  |  |  | √ |  |  |  |  |  |  |  |
| 3 (1) | ∙ |  |  | √ |  |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 (2) | ∙ |  |  | √ |  |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 (1) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 (2) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 (3) | ∙ |  |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 (4) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 (1) | ∙ |  |  |  |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 (2) | ∙ |  |  | √ |  |  |  |  |  |  |  |  | √ |  |  |  |  |  |  |  |
| 5 (3) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 (1) | ∙ | √ |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |  | √ |  |
| period | topic / activity | hours | | | instructor | location | outcomes | | method | | | | | | | | Evaluation | | | | | | | | | | |
| lecture | Practice | sum | lecture | Person (answer questions, quizzes, research) | Small group (discussion, analysis, report) | Presentation of information / work | Demonstration/observ | practice / practice procedures | training | behavioral practice | attendance and participation | perform/submit tasks on time | individual contributions | group performance | presentation | written test | oral examination | practical exam | Observe operations in simulations. | observe the operation in real situation | observed during collaboration (colleagues) |
| 12 | lecture  - Review knowledge, practice Massage oil randomly given to 5 learners to express their opinions.  - Lecture on the production of pharmaceutical capsules  Practice  - Produce capsules | 1 | 2 | 3 | Kingkeaw jangsawat | 22402 | 1 (1) | ∙ | √ | √ | √ |  |  |  |  |  | √ | √ |  |  |  |  |  |  |  |  |  |
| 1 (2) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 (3) | ∙ |  | √ | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 (1) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 (2) | ∙ |  |  |  |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 (3) | ∙ |  |  | √ |  |  |  |  |  |  |  |  | √ |  |  |  |  |  |  |  |
| 3 (1) | ∙ |  |  | √ |  |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 (2) | ∙ |  |  | √ |  |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 (1) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 (2) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 (3) | ∙ |  |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 (4) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 (1) | ∙ |  |  |  |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 (2) | ∙ |  |  | √ |  |  |  |  |  |  |  |  | √ |  |  |  |  |  |  |  |
| 5 (3) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 (1) | ∙ | √ |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |  | √ |  |
| period | topic / activity | hours | | | instructor | location | outcomes | | method | | | | | | | | Evaluation | | | | | | | | | | |
| lecture | Practice | sum | lecture | Person (answer questions, quizzes, research) | Small group (discussion, analysis, report) | Presentation of information / work | Demonstration/observ | practice / practice procedures | training | behavioral practice | attendance and participation | perform/submit tasks on time | individual contributions | group performance | presentation | written test | oral examination | practical exam | Observe operations in simulations. | observe the operation in real situation | observed during collaboration (colleagues) |
| 13 | lecture  - Review knowledge capsules process  Practice  - Produce capsules | 1 | 2 | 3 | Kingkeaw jangsawat | 22402 | 1 (1) | ∙ | √ | √ | √ |  |  |  |  |  | √ | √ |  |  |  |  |  |  |  |  |  |
| 1 (2) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 (3) | ∙ |  | √ | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 (1) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 (2) | ∙ |  |  |  |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 (3) | ∙ |  |  | √ |  |  |  |  |  |  |  |  | √ |  |  |  |  |  |  |  |
| 3 (1) | ∙ |  |  | √ |  |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 (2) | ∙ |  |  | √ |  |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 (1) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 (2) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 (3) | ∙ |  |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 (4) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 (1) | ∙ |  |  |  |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 (2) | ∙ |  |  | √ |  |  |  |  |  |  |  |  | √ |  |  |  |  |  |  |  |
| 5 (3) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 (1) | ∙ | √ |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |  | √ |  |
| period | topic / activity | hours | | | instructor | location | outcomes | | method | | | | | | | | Evaluation | | | | | | | | | | |
| lecture | Practice | sum | lecture | Person (answer questions, quizzes, research) | Small group (discussion, analysis, report) | Presentation of information / work | Demonstration/observ | practice / practice procedures | training | behavioral practice | attendance and participation | perform/submit tasks on time | individual contributions | group performance | presentation | written test | oral examination | practical exam | Observe operations in simulations. | observe the operation in real situation | observed during collaboration (colleagues) |
| 14 | lecture  - Review knowledge capsules process  Practice  - Produce capsules | 1 | 2 | 3 | Kingkeaw jangsawat | 22402 | 1 (1) | ∙ | √ | √ | √ |  |  |  |  |  | √ | √ |  |  |  |  |  |  |  |  |  |
| 1 (2) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 (3) | ∙ |  | √ | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 (1) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 (2) | ∙ |  |  |  |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 (3) | ∙ |  |  | √ |  |  |  |  |  |  |  |  | √ |  |  |  |  |  |  |  |
| 3 (1) | ∙ |  |  | √ |  |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 (2) | ∙ |  |  | √ |  |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 (1) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 (2) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 (3) | ∙ |  |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 (4) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 (1) | ∙ |  |  |  |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 (2) | ∙ |  |  | √ |  |  |  |  |  |  |  |  | √ |  |  |  |  |  |  |  |
| 5 (3) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 (1) | ∙ | √ |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |  | √ |  |
| period | topic / activity | hours | | | instructor | location | outcomes | | method | | | | | | | | Evaluation | | | | | | | | | | |
| lecture | Practice | sum | lecture | Person (answer questions, quizzes, research) | Small group (discussion, analysis, report) | Presentation of information / work | Demonstration/observ | practice / practice procedures | training | behavioral practice | attendance and participation | perform/submit tasks on time | individual contributions | group performance | presentation | written test | oral examination | practical exam | Observe operations in simulations. | observe the operation in real situation | observed during collaboration (colleagues) |
| 15 | lecture  - Review knowledge capsules process  Practice  - Produce tablet dosage from | 1 | 2 | 3 | Kingkeaw jangsawat | 22402 | 1 (1) | ∙ | √ | √ | √ |  |  |  |  |  | √ | √ |  |  |  |  |  |  |  |  |  |
| 1 (2) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 (3) | ∙ |  | √ | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 (1) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 (2) | ∙ |  |  |  |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 (3) | ∙ |  |  | √ |  |  |  |  |  |  |  |  | √ |  |  |  |  |  |  |  |
| 3 (1) | ∙ |  |  | √ |  |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 (2) | ∙ |  |  | √ |  |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 (1) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 (2) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 (3) | ∙ |  |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 (4) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 (1) | ∙ |  |  |  |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 (2) | ∙ |  |  | √ |  |  |  |  |  |  |  |  | √ |  |  |  |  |  |  |  |
| 5 (3) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 (1) | ∙ | √ |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |  | √ |  |

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| period | topic / activity | hours | | | instructor | location | outcomes | | method | | | | | | | | Evaluation | | | | | | | | | | |
| lecture | Practice | sum | lecture | Person (answer questions, quizzes, research) | Small group (discussion, analysis, report) | Presentation of information / work | Demonstration/observ | practice / practice procedures | training | behavioral practice | attendance and participation | perform/submit tasks on time | individual contributions | group performance | presentation | written test | oral examination | practical exam | Observe operations in simulations. | observe the operation in real situation | observed during collaboration (colleagues) |
| 16 | Review production knowledge  The production of pills was randomly assigned to 5 learners to express their opinions. | 1 | 2 | 3 | Kingkeaw jangsawat | 22402 | 1 (1) | ∙ | √ | √ | √ |  |  |  |  |  | √ | √ |  |  |  |  |  |  |  |  |  |
| 1 (2) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 (3) | ∙ |  | √ | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 (1) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 (2) | ∙ |  |  |  |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 (3) | ∙ |  |  | √ |  |  |  |  |  |  |  |  | √ |  |  |  |  |  |  |  |
| 3 (1) | ∙ |  |  | √ |  |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 (2) | ∙ |  |  | √ |  |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 (1) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 (2) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 (3) | ∙ |  |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 (4) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 (1) | ∙ |  |  |  |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 (2) | ∙ |  |  | √ |  |  |  |  |  |  |  |  | √ |  |  |  |  |  |  |  |
| 5 (3) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 (1) | ∙ | √ |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |  |  | √ |  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| period | topic / activity | hours | | | instructor | location | outcomes | | method | | | | | | | | Evaluation | | | | | | | | | | |
| lecture | Practice | sum | lecture | Person (answer questions, quizzes, research) | Small group (discussion, analysis, report) | Presentation of information / work | Demonstration/observ | practice / practice procedures | training | behavioral practice | attendance and participation | perform/submit tasks on time | individual contributions | group performance | presentation | written test | oral examination | practical exam | Observe operations in simulations. | observe the operation in real situation | observed during collaboration (colleagues) |
| 17 | Final exam, 30 questions, subjective exam, 2 hours of exam time, can leave the exam room after 1 hour | 1 | 2 | 3 | Kingkeaw jangsawat | 22402 | 1 (1) | ∙ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 (2) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 (3) | ∙ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 (1) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 (2) | ∙ |  |  |  |  |  |  |  |  |  |  |  |  |  | √ |  |  |  |  |  |
| 2 (3) | ∙ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 (1) | ∙ |  |  |  |  |  |  |  |  |  |  |  |  |  | √ |  |  |  |  |  |
| 3 (2) | ∙ |  |  |  |  |  |  |  |  |  |  |  |  |  | √ |  |  |  |  |  |
| 4 (1) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 (2) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 (3) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 (4) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 (1) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 (2) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 (3) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 (1) | ∙ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | √ |  |  |  |

2. **learning evaluation plan**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **learning outcomes** | **How to evaluate students** | **assessment period** | **Assessment Proportion** |
|  | 1 (1) | Assessment based on attendance/participation in teaching and learning | 1 - 15 | 10 |
|  | 1(1), 1(3), 2(2), 5(2) | Estimated from delivering work on time | 1 – 4, 6 – 10, 12-15 | 10 |
|  | 2(2), 5(2) | Assessment from individual performance  (document/report) | 1 – 4, 6, 9, 10, 13-15 |
|  | 2(2), 4(2), 4(4),5(2) | Assessment from group performance  (document/report) | 9 |
|  |  | Assessment from the presentation  (verbal and media / poster) |  |  |
|  | 1 (1), 1 (3), 2 (2) | Assessed from a written examination | 5, 11 | 40 |
|  |  | Assessed by oral examination |  |  |
|  | 1 (1), 1(3), 2 (2), 2(3) | Assessed from practical exams | 5, 11 | 20 |
|  |  | Assessed by observing operations in a simulated situation. |  |  |
|  | 1 (1), 1(3), 2 (2), 2(3), 4(2), 4(3) | Assessed by observing the operation in real situations. | 9, 14, 15 | 10 |
|  | Assessment based on observations during collaboration with fellow students/colleagues. | 9 | 10 |

**Category ๖ teaching resources**

1.Textbooks

Sumal Saraya and others. Herbal medicine production process with modern technology. Faculty of Pharmacy, Mahidol University, 2011.

Committee on the Protection and Promotion of Traditional Thai Medicine Wisdom. Herbal Reference Textbook Volume 1. Department of Development of Thai Traditional and Alternative Medicine. Ministry of Public Health, 2009

Waraporn Junyaprasert and others. The process of producing herbal cosmetics with modern technology. Pharmacy, Mahidol University, 2011

2. PowerPoint

3. Documents and information advice

(1) tree species search <http://www.rspg.or.th/>

(2) tree species search http://www.dnp.go.th/index3d.asp