

|                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                       |                                                                                                                                  |                                                                                    |                                                                                                                                     |
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| Akashi College                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Year                                  | 2023                                                                                                                             | Course Title                                                                       | Design and Drawing I A                                                                                                              |
| Course Information                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                       |                                                                                                                                  |                                                                                    |                                                                                                                                     |
| Course Code                                                                                                                                                                                                                                             | 5129                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                       | Course Category                                                                                                                  | Specialized / Compulsory                                                           |                                                                                                                                     |
| Class Format                                                                                                                                                                                                                                            | Practical training                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                       | Credits                                                                                                                          | School Credit: 1                                                                   |                                                                                                                                     |
| Department                                                                                                                                                                                                                                              | Mechanical Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                       | Student Grade                                                                                                                    | 1st                                                                                |                                                                                                                                     |
| Term                                                                                                                                                                                                                                                    | First Semester                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                       | Classes per Week                                                                                                                 | 2                                                                                  |                                                                                                                                     |
| Textbook and/or Teaching Materials                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                       |                                                                                                                                  |                                                                                    |                                                                                                                                     |
| Instructor                                                                                                                                                                                                                                              | SHI Fenghui                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                       |                                                                                                                                  |                                                                                    |                                                                                                                                     |
| Course Objectives                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                       |                                                                                                                                  |                                                                                    |                                                                                                                                     |
| (1) Understand the standards of mechanical drawing and can accurately create drawings of mechanical parts, etc.<br>(2) Can design major parts of various machinery and equipment based on their specifications, and create production drawings of them. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                       |                                                                                                                                  |                                                                                    |                                                                                                                                     |
| Rubric                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                       |                                                                                                                                  |                                                                                    |                                                                                                                                     |
|                                                                                                                                                                                                                                                         | Ideal Level                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                       | Standard Level                                                                                                                   |                                                                                    | Unacceptable Level                                                                                                                  |
| Achievement 1                                                                                                                                                                                                                                           | Understand the standards of mechanical drawing and can fully accurately create drawings of mechanical parts, etc.                                                                                                                                                                                                                                                                                                                                                                                  |                                       | Understand the standards of mechanical drawing and can accurately create production drawings of mechanical parts, etc.           |                                                                                    | Do not understand the standards of mechanical drawing and cannot accurately create production drawings of mechanical parts, etc.    |
| Achievement 2                                                                                                                                                                                                                                           | Can fully design major parts of various machinery and equipment based on their specifications, and create production drawings of them.                                                                                                                                                                                                                                                                                                                                                             |                                       | Can design major parts of various machinery and equipment based on their specifications, and create production drawings of them. |                                                                                    | Cannot design major parts of various machinery and equipment based on their specifications, and create production drawings of them. |
| Assigned Department Objectives                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                       |                                                                                                                                  |                                                                                    |                                                                                                                                     |
| Teaching Method                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                       |                                                                                                                                  |                                                                                    |                                                                                                                                     |
| Outline                                                                                                                                                                                                                                                 | Students will learn the basic knowledge and rules of mechanical design drawings necessary to produce machines that are useful in living, and they will master drawing techniques.<br>This course will be held in a lecture style, and taught by a faculty member who is engaged in mechanical design in a company. He will use his experience to teach students how to represent drawings, including the standards, projections, section and special representation of mechanical design drawings. |                                       |                                                                                                                                  |                                                                                    |                                                                                                                                     |
| Style                                                                                                                                                                                                                                                   | Lectures will be given in line with the textbook, and practice problems will be assigned.                                                                                                                                                                                                                                                                                                                                                                                                          |                                       |                                                                                                                                  |                                                                                    |                                                                                                                                     |
| Notice                                                                                                                                                                                                                                                  | We will use the textbook, handouts, etc. to accumulate knowledge and learn about rules. While there are many things to learn, students should practice with patience and perseverance. Assignments must be submitted by the due date.<br>Students who miss 1/4 or more of classes will not be eligible for evaluation.                                                                                                                                                                             |                                       |                                                                                                                                  |                                                                                    |                                                                                                                                     |
| Characteristics of Class / Division in Learning                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                       |                                                                                                                                  |                                                                                    |                                                                                                                                     |
| <input type="checkbox"/> Active Learning                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <input type="checkbox"/> Aided by ICT |                                                                                                                                  | <input checked="" type="checkbox"/> Applicable to Remote Class                     | <input checked="" type="checkbox"/> Instructor Professionally Experienced                                                           |
| Course Plan                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                       |                                                                                                                                  |                                                                                    |                                                                                                                                     |
|                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                       | Theme                                                                                                                            | Goals                                                                              |                                                                                                                                     |
| 1st Semester                                                                                                                                                                                                                                            | 1st Quarter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1st                                   | Machine definitions and design drawing, drawing scale, line, character type, and drawing representation                          | Learn about JIS standards, drawing scale, line and character types, etc.           |                                                                                                                                     |
|                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 2nd                                   | Top view drawing                                                                                                                 | Learn top view drawing.                                                            |                                                                                                                                     |
|                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 3rd                                   | Drawing exercise [1] (how to use drawing tools, lines, top view drawing)                                                         | Can draw a hook in the exercise of top view drawing.                               |                                                                                                                                     |
|                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 4th                                   | Projection drawing (1)                                                                                                           | Learn third-angle projection and orthographic projection drawing.                  |                                                                                                                                     |
|                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 5th                                   | Projection drawing (2)                                                                                                           | Learn orthographic projection drawing.                                             |                                                                                                                                     |
|                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 6th                                   | Auxiliary projection drawing                                                                                                     | Learn auxiliary projection drawing.                                                |                                                                                                                                     |
|                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 7th                                   | Section view drawing (1)                                                                                                         | Understand section view drawing.                                                   |                                                                                                                                     |
|                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 8th                                   | Drawing exercise or short test                                                                                                   | Drawing exercise or short test                                                     |                                                                                                                                     |
|                                                                                                                                                                                                                                                         | 2nd Quarter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 9th                                   | Section view drawing (2)                                                                                                         | Learn full section view, one-sided section view, and partial section view drawing. |                                                                                                                                     |
|                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 10th                                  | Section view drawing (3)                                                                                                         | Learn multi-section view drawing.                                                  |                                                                                                                                     |
|                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 11th                                  | Special projection drawing                                                                                                       | Learn special projection drawing.                                                  |                                                                                                                                     |
|                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 12th                                  | Dimensioning (1)                                                                                                                 | Learn dimensioning.                                                                |                                                                                                                                     |
|                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 13th                                  | Dimensioning (2)                                                                                                                 | Learn dimensioning.                                                                |                                                                                                                                     |
|                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 14th                                  | Dimensioning (3)                                                                                                                 | Learn dimensioning.                                                                |                                                                                                                                     |
|                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 15th                                  | Three-dimensional drawing                                                                                                        | Learn three-dimensional drawing using isometric view and cabinet projection.       |                                                                                                                                     |
|                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 16th                                  | Final exam                                                                                                                       |                                                                                    |                                                                                                                                     |
| Evaluation Method and Weight (%)                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                       |                                                                                                                                  |                                                                                    |                                                                                                                                     |
|                                                                                                                                                                                                                                                         | Examination                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Exercises                             | Behavior                                                                                                                         | Total                                                                              |                                                                                                                                     |
| Subtotal                                                                                                                                                                                                                                                | 50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 50                                    | 0                                                                                                                                | 100                                                                                |                                                                                                                                     |
| Basic Proficiency                                                                                                                                                                                                                                       | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0                                     | 0                                                                                                                                | 0                                                                                  |                                                                                                                                     |
| Specialized Proficiency                                                                                                                                                                                                                                 | 50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 50                                    | 0                                                                                                                                | 100                                                                                |                                                                                                                                     |

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|------------------------|---|---|---|---|
| Cross Area Proficiency | 0 | 0 | 0 | 0 |
|------------------------|---|---|---|---|