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|--|---|--|--|--|--|--|---|
| Tsuyama College  |   | Year   | 2021   |  | Course Title   | Advanced Communication Engineering                             |   |
| Course Information   |   |  |  |  |  |  |   |
| Course Code  |   | 0122   |  | Course Category  |  | Specialized / Elective   |   |
| Class Format   |   | Lecture  |  | Credits  |  | Academic Credit: 2   |   |
| Department   |   | Department of Integrated Science and Technology Communication and Informations System Program  |  | Student Grade  |  | 5th  |   |
| Term   |   | Year-round   |  | Classes per Week   |  | 1  |   |
| Textbook and/or Teaching Materials   |   | Required Materials : "Hoki Ichi Rikutoku・Ni Rikutoku・Kokunai Denshinyo" (Denkisinkokai)  |  |  |  |  |   |
| Instructor   |   | SHIMADA Takao  |  |  |  |  |   |
| Course Objectives  |   |  |  |  |  |  |   |
| Learning purposes :<br>1.To be able to explain the principle of Radio Act.<br>2.To be able to explain the configuration and principle of wireless communication equipment. |   |  |  |  |  |  |   |
| Rubric   |   |  |  |  |  |  |   |
|  | Excellent   |  | Good   |  | Acceptable   |  | Not acceptable                              |
| Achievement 1  | Understands the principle of the Radio Act and be able to explain it accurately.  |  | Understands the principle of the Radio Act and is able to explain it.  |  | Is able to explain the outline of the principle of the Radio Act.  |  | The required standard has not been reached. |
| Achievement 2  | Is able to accurately explain the configuration of wireless devices within the range of On-The-Ground Second-Class Special Radio Operator |  | Is able to explain the configuration of wireless devices within the range of On-The-Ground Second-Class Special Radio Operator |  | Can outline the configuration for wireless devices within the range of On-The-Ground Second-Class Special Radio Operator |  | The required standard has not been reached. |
| Assigned Department Objectives   |   |  |  |  |  |  |   |
| Teaching Method  |   |  |  |  |  |  |   |
| Outline  |   | Gneral or Specialized : Specialized<br><br>Field of learning : Electrical and Electronic Engineering<br><br>Foundational academic disciplines : Engineering / Electrical and electronic engineering / Communication engineering<br><br>Relationship with Educational Objectives : This class is equivalent to "(3) Acquire deep foundation knowledge of the major subject area".<br><br>Course outline : In this course, we will mainly learn about wireless communication technology and Radio Act.   |  |  |  |  |   |
| Style  |   | "Course method : Mainly, board-writing is used. Sometimes, practices regarding the foundation will be held.<br><br>Grade evaluation method : Exams (80%) + Reports (20%).<br>Regular examinations will be conducted a total of 2 times, and the evaluation ratios will be the same. As a general rule, we do not allow test.   |  |  |  |  |   |
| Notice   |   | Precautions on the enrollment :<br>Students must take this class (no more than one-third of the required number of class hours missed) in order to complete the 5th year course.This is a class that requires study outside of class hours. A total of 45 hours of study is required per credit, including both class time and study outside class time. Follow the instructions of the instructor regarding study outside of class hours.<br><br>Course advice:<br>Since there are many technical terms, it is not necessary to memorize them but to understand their meanings and definitions.<br><br>Foundational subjects :<br>Electric Circuits I (3rd year), Electronic Circuits I (3th), Electric Circuits II (4th), Electronic Circuits II (4th), Electromagnetism II (4th)<br><br>Attendance advice :<br>If you do not understand the content of the class, ask the teacher.<br>If you are not present at the time of the attendance check, you will be counted as tardy, and three tardies will count as one absence.<br>All assignments must be submitted on time. Submissions will not be accepted after the due date. |  |  |  |  |   |
| 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 type="checkbox"/> Instructor Professionally Experienced |   |
| E l e c t i v e   m u s t   c o m p l e t e   s u b j e c t s  |   |  |  |  |  |  |   |
| Course Plan  |   |  |  |  |  |  |   |
|  |   |  | Theme  |  |  | Goals  |   |
| 2nd Semester<br>r  | 3rd Quarter   | 1st  | Guidance, Basic properties of electromagnetic waves  |  |  | Principle of electromagnetic wave                              |   |
|  |   | 2nd  | Electromagnetic waves and radio waves  |  |  | Various radio waves  |   |
|  |   | 3rd  | Basic theory of antenna 1  |  |  | Basic antenna  |   |
|  |   | 4th  | Basic theory of antenna 2  |  |  | Gain, Effective length   |   |
|  |   | 5th  | Various antennas   |  |  | Basic principle of various antennas                            |   |
|  |   | 6th  | Radio Act(Pupose. Lincense for Radio Stations)   |  |  |  |   |

|  |                |      |   |   |
|--|----------------|------|---|---|
|  |                | 7th  | Radio Act(Radio Equipment)                  |   |
|  |                | 8th  | 2nd semester mid-term exam                  |   |
|  | 4th<br>Quarter | 9th  | Return and commentary of exam answers       |   |
|  |                | 10th | Amplitude modulation transmitter / receiver | Amplitude modulation transmitter / receiver configuration |
|  |                | 11th | Frequency modulation transmitter / receiver | Frequency modulation transmitter / receiver configuration |
|  |                | 12th | Radar, satellite communication equipment    | Basic principle of radar                                  |
|  |                | 13th | Radio Act(Radio Operators, Operation)       |   |
|  |                | 14th | Radio Act(Supervision, Penal Provisions)    |   |
|  |                | 15th | 2nd semester final exam                     |   |
|  |                | 16th | Return and commentary of exam answers       |   |

| Evaluation Method and Weight (%) |             |        |       |
|----------------------------------|-------------|--------|-------|
|                                  | Examination | Report | Total |
| Subtotal                         | 80          | 20     | 100   |
| Basic Proficiency                | 0           | 0      | 0     |
| Specialized Proficiency          | 80          | 20     | 100   |
| Cross Area Proficiency           | 0           | 0      | 0     |