

Tsuyama College		Year	2021		Course Title	Graduation Thesis	
Course Information							
Course Code	0178			Course Category	Specialized / Compulsory		
Class Format	Experiment			Credits	School Credit: 9		
Department	Department of Integrated Science and Technology Electrical and Electronic Systems Program			Student Grade	5th		
Term	Year-round			Classes per Week	9		
Textbook and/or Teaching Materials	Reference books :Textbooks that have been used in class so far						
Instructor	KATORI Shigetaka,KOBAYASHI Toshiro,HARADA Kanji,NAKAMURA Shigeyuki,YAGI Hideyuki,NISHIO Kimihiro,OKI Shinichiro,MAEHARA Kenji,MINATOHARA Tetsuya,SHIMADA Takao,YAMAGUCHI Yumi,KUBO Toshihiro						
Course Objectives							
Learning purposes: In this class, individual students plan, survey, and procure materials for specific tasks by making use of their imaginative ability, use their imagination to solve the problems, and improve their presentation ability in the presentation of the summary. This subject fulfills the final requirements for graduation.							
Course Objectives: 1. Understand the principles of problem solving in complex problems, understand the background of research, technological trends, and understand the purpose of research. (A-1, A-3, C-2, G-1) 2. Students will grasp the current situation and purpose of their research, set problems within the gap, make a research plan, develop problem setting ability and conceptual ability to systematically collect necessary materials, and tackle complex engineering problems. (D-1, E-1, E-3, G-1) 3. Based on the plan, you can put your creativity into concrete experiments and analysis. ICT can be used for basic information gathering and information dissemination. (C-2, D-1, E-1, E-3) ◎4. Develop presentation and communication skills by compiling and presenting research results in a report. Smooth communication can be achieved by using effective means (C-2, D-1, F-1).							
Rubric							
	Excellent		Good		Acceptable		Not acceptable
Achievement 1	Students are very clear about the background and purpose of the research; the background and purpose of each piece of research, etc. are set; the solution and progress are shown, and excellent results can be expected.		Students are clear about the background and purpose of the research, and the contents of the research carried out by each student are set, and the solution and progress are shown.		The background and purpose of the research, such as the content of the research carried out by each person are set, and the solution and progress are almost shown.		The background and purpose are not set sufficiently, and the logic is lacking.
Achievement 2	Can understand the current situation and purpose, set problems within the gap, make a research plan, systematically collect necessary materials, etc. Develop problem setting ability and conceptual ability, and take on complex engineering tasks that can be assembled.		Understand the current situation and purpose, understand the problems, make a research plan, collect some materials, and tackle complex engineering problems.		By grasping the current situation and purpose and receiving instructions from the instructor, can understand the problem, make a research plan, collect a certain amount of materials, and work on complex technical tasks.		Even if understand the current situation and purpose and receive instructions from instructor, cannot understand the problems, make a research plan, and collect some materials.
Achievement 3	Even with no special guidance, the student can put creativity into practice and concretely analyze based on the research plan. ICT can be used for basic information collection and information dissemination.		Based on the guidance from the instructor, the experiment and analysis can be carried out concretely and creatively, based on the research plan. ICT can be used for basic information gathering and information dissemination.		Based on careful guidance from the instructor, the experiment and analysis can be carried out concretely and creatively based on the research plan. ICT can be used for basic information gathering and information dissemination.		Even with careful guidance from the instructor, planned and creative experiments and analyses cannot proceed. ICT cannot be used for basic information collection and information dissemination.
Achievement 4	Research results can be summarized in a report, presented in an easy-to-understand manner, and appropriate questions and answers (communication) can be conducted.		Research results can be summarized in a report, presented (presentation), and Q & A (communication) can be held.		Research results can be summarized in a report and presented (presentation), and questions and answers (communication) can be held within a limited range.		Even if receive guidance, cannot sufficiently prepare a report, present (presentation), and ask and answer (communicate) the research results.
Assigned Department Objectives							
Teaching Method							

Outline	<p>General or Specialized : Specialized</p> <p>Field of learning : Foundation science and technology subjects</p> <p>Required, Elective, etc. : Required subjects</p> <p>Foundational academic disciplines : Electrical and electronic engineering and related field</p> <p>Relationship with Educational Objectives : This class is equivalent to "(3) Acquire deep foundation knowledge of the major subject area", "(6) Develop problem solving ability", and "(7) Develop communication and presentation abilities".</p> <p>Relationship with JABEE programs : The main goals of learning / education in this class is " D-1", also "A-1", "A-2", "C-1", "C-2", "E-1", "E-3", and "F-1" is involved.</p> <p>Course outline : In this subject, individual students plan, survey, and procure materials for specific tasks by making use of their creativity, use their creativity to solve the problems, and improve their presentation ability in the presentation of the summary. This subject fulfills the final requirements for graduation.</p>
Style	<p>Course method : Conduct research activities independently under the guidance of the faculty member in charge. It is also related to research in the advanced course, and special consideration is given to the place of assignment to the laboratory for students who go on to the advanced course. In addition, foreign literatures will be read in each research laboratory as appropriate.</p>
Notice	<p>Precautions on the enrollment : This course is mainly for practical skills, students must take this class (no more than one-third of the required number of class hours missed) in order to complete the course of the academic year. In addition, since it is a subject that includes independent learning outside of class hours and 9 hours are set for 6 hours a week, independent learning time outside of hours is required.</p> <p>Course advice : It is important to be inquisitive and proactive.</p> <p>Foundational subjects : All subjects studied so far</p> <p>Related subjects : All subjects</p> <p>Attendance advice : Conduct research activities independently under the guidance of the faculty member in charge. It is also related to research in the advanced course, and special consideration is given to the place of assignment to the laboratory for students who go on to the advanced course. In addition, each laboratory will read the foreign books as appropriate.</p>

#### Characteristics of Class / Division in Learning

<input type="checkbox"/> Active Learning	<input type="checkbox"/> Aided by ICT	<input type="checkbox"/> Applicable to Remote Class	<input type="checkbox"/> Instructor Professionally Experienced
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#### Course Plan

			Theme	Goals
1st Semester	1st Quarter	1st	Guidance [Theme briefing session, desired theme questionnaire]	
		2nd	Under the guidance of the instructor, research theme determination, planning literature survey, data collection, implementation plan, material procurement, experimental equipment production, experiment implementation, examination of experimental results and feedback to the next experiment, summary of interim results	The background and purpose of the research, the content of the research carried out by each person, etc., are set.
		3rd	Under the guidance of the instructor, research theme determination, planning literature survey, data collection, implementation plan, material procurement, experimental equipment production, experiment implementation, examination of experimental results and feedback to the next experiment, summary of interim results	The background and purpose of the research, the content of the research carried out by each person, etc., are set.
		4th	Under the guidance of the instructor, research theme determination, planning literature survey, data collection, implementation plan, material procurement, experimental equipment production, experiment implementation, examination of experimental results and feedback to the next experiment, summary of interim results	The background and purpose of the research, the content of the research carried out by each person, etc., are set.
		5th	Under the guidance of the instructor, research theme determination, planning literature survey, data collection, implementation plan, material procurement, experimental equipment production, experiment implementation, examination of experimental results and feedback to the next experiment, summary of interim results	Have been able to find issues to be solved from the deviation from the current situation regarding goals and results.



		3rd	• Review the research execution plan and contents to carry out the latter term research	Have been able to find issues to be solved from the deviation from the current situation regarding goals and results.
		4th	• Review the research execution plan and contents to carry out the latter term research	Have been able to find issues to be solved from the deviation from the current situation regarding goals and results.
		5th	• Review the research execution plan and contents to carry out the latter term research	Have been able to find issues to be solved from the deviation from the current situation regarding goals and results.
		6th	• Review the research execution plan and contents to carry out the latter term research	Have been able to find issues to be solved from the deviation from the current situation regarding goals and results.
		7th	• Review the research execution plan and contents to carry out the latter term research	Have been able to find issues to be solved from the deviation from the current situation regarding goals and results.
		8th	• Review the research execution plan and contents to carry out the latter term research	Have been able to find issues to be solved from the deviation from the current situation regarding goals and results.
	4th Quarter	9th	• Review the research execution plan and contents to carry out the latter term research	Have been able to find issues to be solved from the deviation from the current situation regarding goals and results.
		10th	• Review the research execution plan and contents to carry out the latter term research	Have been able to find issues to be solved from the deviation from the current situation regarding goals and results.
		11th	• Review the research execution plan and contents to carry out the latter term research	Have been able to find issues to be solved from the deviation from the current situation regarding goals and results.
		12th	• Review the research execution plan and contents to carry out the latter term research	Have been able to find issues to be solved from the deviation from the current situation regarding goals and results.
		13th	• Review the research execution plan and contents to carry out the latter term research	Have been able to find issues to be solved from the deviation from the current situation regarding goals and results.
		14th	• Review the research execution plan and contents to carry out the latter term research	Have been able to find issues to be solved from the deviation from the current situation regarding goals and results.
		15th	• Graduation Research Examination Committee (late February) Oral presentation at the examination committee.	<ul style="list-style-type: none"> <li>• Speaking in an easy-to-hear voice at the debriefing session.</li> <li>• Looking at the judging faculty member and talking</li> <li>• Can answer questions</li> </ul>
		16th	• Hold a debriefing session.	

#### Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	0	50	0	0	50	0	100
Basic Proficiency	0	0	0	0	0	0	0
Specialized Proficiency	0	50	0	0	50	0	100
Cross Area Proficiency	0	0	0	0	0	0	0