

Course Code	TKEE162106													
Course Name	Telecommunications Engineering													
Course Instructors	Eny Sukani Rahayu; M Nur Rizal; I Wayan Mustika; Budi Setyanto; Wahyu Dewanto													
Course Type	Required													
Course Classification	Engineering Topics													
Credit / Contact Hour per Week	2 / 100 minutes per Week													
Course Description	Telecommunication Engineering Courses introduce and learn basic concepts, working principles and telecommunications technologies which include: basic communication systems, analog modulation, digital communication introduction, telephone communication systems, radio communications, television systems, data communications, digital communications, fiber optic communications, satellite communications and cellular communications. Fundamental things required for the deepening of the material are given in the form of tasks on certain material													
Prerequisites Courses	Probability and Statistics (TKU125)													
Covered Student Outcome	Fundamental and Engineering Knowledge (a)													
Learning Outcome	<ol style="list-style-type: none"> 1. Students can explain the basic concept of communication system, interaction direction, time and frequency domain, basic of analog communication, basic of digital communication, rapid data, and can solve various problems related to basic communication system through class discussion. 2. Students can explain the concept of analog modulation such as amplitude modulation (AM), frequency modulation (FM), the effect of modulation index on AM and FM system and can solve various problems related to modulation 3. Students can explain the concept of digital communication, digital superiority and ugliness, sampling and Nyquist requirements, uniform and non-uniform quantization and variety of digital modulation. Students can design systematic diagrams for digital modulation. 4. Students can explain and understand the basic concepts of wireline telephony, dialing systems, connecting and local requirements, digitizing telephone networks and the development of next generation networks. 5. Students can explain basic concepts of radio communication, electromagnetic wave theory, antenna working principle, formulation of estimated propagation loss, plural and fading path and radio communication sections 6. Students can explain the basic concepts of television systems, black and white TV, the principle of video signal generation and views on color TV and digital TV technology 													
Topic	<ol style="list-style-type: none"> 1. Telecommunication Introduction 2. Analog Modulation 3. Digital Communication 4. Cable Telephone 5. Radio Communication 6. Television System 7. Data Communication 8. Aspects of the Network 9. Optical Wire 10. Celluler Communication 													
Direct Assesment	<table border="1"> <thead> <tr> <th>Direct Assesment Plan</th> <th>Measured Learning Outcome</th> </tr> </thead> <tbody> <tr> <td>Group Task</td> <td>LO2, LO4</td> </tr> <tr> <td>Quiz</td> <td>LO3</td> </tr> <tr> <td>Mid Exam</td> <td>LO1, LO4</td> </tr> <tr> <td>Final Exam</td> <td>LO1, LO2</td> </tr> <tr> <td></td> <td></td> </tr> </tbody> </table>		Direct Assesment Plan	Measured Learning Outcome	Group Task	LO2, LO4	Quiz	LO3	Mid Exam	LO1, LO4	Final Exam	LO1, LO2		
Direct Assesment Plan	Measured Learning Outcome													
Group Task	LO2, LO4													
Quiz	LO3													
Mid Exam	LO1, LO4													
Final Exam	LO1, LO2													
Indirect Assesment	Questionnaire (EDOM)													

References	<p>[1] Setiyanto, B., Dasar-Dasar Telekomunikasi, Penerbit Sakti, Yogyakarta, 2010.</p> <p>[2] Frenzel, Louis E. Principles of Electronic Communication Systems, 2002.</p> <p>[3] Rappaport, Theodore S., Wireless Communications Principles and Practice, Prentice Hall PTR, New Jersey, 1996.</p> <p>[4] Haykin, S., M. Moher, Modern Wireless Communications, Pearson Prentice Hall, New Jersey, 2005.</p>
------------	---