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| Course | Name | : Broadcast System |
| | Code | : EE184933 |
| | Credits | : 3 |
| | Semester | : Elective |

Description of Course

Broadcasting system course provides the basic of a broadcasting system that is part of the Multimedia Telecommunications Engineering field. This course learns about standards and regulations in the field of analog and digital broadcasting, broadcasting business models, to the basis of designing analog and digital broadcasting systems, including technology to optimize digital broadcasting technical parameters and measuring performance associated with channel conditions, as well as the desired transmission quantity and quality.

Learning Outcomes

Knowledge

(P03) Mastering the concepts and principles of design procedure in power systems, control systems, multimedia telecommunications, or electronics.

Specific Skill

(KK01) Able to formulate engineering problems in power systems, control systems, multimedia telecommunications, or electronics.

General Skill

(KU12) Able to implement information and communication technology (ICT) in the context of implementation of his/her work.

Attitude

(S09) Demonstrating attitude of responsibility on work in his/her field of expertise independently.

(S12) Working together to be able to make the most of his/her potential.

Course Learning Outcomes

Knowledge

Mastering the concepts, principles, and procedures for broadcasting system design, which involves 3 main aspects, namely regulatory aspects, aspects of the business model of broadcasting, and analog and digital broadcasting technology aspects.

Specific Skill

Able to formulate engineering through survey design and link budget design and selection of analog and digital broadcasting parameters in order to obtain a broadcasting system with adequate service and quality coverage in accordance with applicable standards and regulations in the broadcasting sector, including alternative solutions to other problems.

General Skill

Having the ability to design analog and digital broadcasting systems by taking into account the transmission aspects; transmission media (terrestrial, satellite and via cable); and signal reception, based on the results of analysis of information and data.

Attitude

Demonstrate the results of learning to obey the law through regulatory learning and work together to make the most of their potential.

Main Subjects

1. Definition and introduction to broadcasting systems
2. Telecommunications Law and Broadcasting Law
3. Ministerial Decree (KM) concerning Broadcasting (Masterplan etc.)
4. Design of Analog and Digital Broadcasting Systems: Regulations, Business Models and Technology
5. Design a link budget in a radio system based on KM
6. Link budget design in analog television systems based on KM
7. Digital Broadcasting Standard
8. Digital audio and video techniques, Source Encoding Techniques
9. Channel Code Technique (Error Correction)
10. Digital Modulation Techniques in Broadcasting, including COFDM techniques
11. Digital Video Broadcasting (DVB-T, DVB-T2, DVT-T2 Lite)
12. Basic optimization of parameters of digital broadcast transmission
13. Frequency allocation technique: MFN-SFN
14. Digital Broadcast performance measurement

Reference(s)

- [1] UU Telekomunikasi
- [2] UU Penyiaran
- [3] KM. 15/2003, KM 76/2003 dan Penggantinya
- [4] ETSI EN.744
- [5] K. Blair B & Jerry W, "Television and Audio Handbook for technician and Engineer", McGraw-Hill, 1990
- [6] Walter Fischer, Digital Video & Audio Broadcasting Technology: A Practical Engineering Guide, , 3rd Edition, Rohde-Schwarz, Springer-Verlag, 2010
- [7] Endroyono, dkk., "Modul Ajar Kuliah Broadcasting", 2014

Prerequisite(s)

EE184631 Communication Systems 2
EE184632 Wave Propagation
EE184633 Communication Electronics