	Universitas Negeri Surabaya Faculty of Engineering, Electrical Engineering Undergraduate Study Program	Document Code

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight			SEMESTER	Compilation Date
Multimedia Security	2020102424	Study Program Elective Courses	T=2	P=0	ECTS=3.18	5	January 2, 2024

AUTHORIZATION	SP Developer	Course Cluster Coordinator	Study Program Coordinator
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Learning model	**Project Based Learning**

Program Learning Outcomes (PLO)

PLO study program that is charged to the course

Program Objectives (PO)

PO - 1	Able to convey ideas and results of multimedia security innovations effectively both orally and in writing
PO - 2	Able to plan, complete and evaluate tasks related to multimedia security

PLO-PO Matrix

P.O
PO-1
PO-2

PO Matrix at the end of each learning stage (Sub-PO)

P.O	Week															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PO-1																
PO-2																

Short Course Description	This course explores the concepts, techniques, and tools used to protect multimedia content from various security threats, such as information theft, data manipulation, illegal control, and unauthorized distribution of content. This course includes an understanding of multimedia technology, including audio, video, images, text, and interactive applications implemented using project-based learning.

References

Main :

1. Ze Nian Li & Andrew, Mark, Fundamentals Of Multimedia, Pearson Education International - Prentice Hall, 2004
2. Frank Y. Shih, Digital Watermarking and Steganography: Fundamentals and Techniques, Second Edition, CRC Press, 2017
3. Shivendra Shivani, Suneeta Agarwal, et al, Handbook of Image-based Security Techniques, Chapman and Hall/CRC; 1st edition, 2018

Supporters:

Supporting lecturer	Dr. Lusia Rakhmawati, S.T., M.T.

Week-	Final abilities of each learning stage (Sub-PO)	Evaluation		Help Learning, Learning methods, Student Assignments, [Estimated time]		Learning materials [References]	Assessment Weight (%)
		Indicator	Criteria & Form	Offline (*offline*)	Online (*online*)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)

1	1.Explain the importance of multimedia security in the modern digital context 2.Presents trends and challenges in multimedia security	1.Accurate explanation of the importance of multimedia security in the modern digital context 2.Ability to present trends and challenges in multimedia security	**Criteria:** Assessment rubric **Form of Assessment** : Participatory Activities	Presentations, discussions and questions and answers		**Material:** Introduction to Multimedia Security **Bibliography:** *Ze Nian Li & Andrew, Mark, Fundamentals Of Multimedia, Pearson Education International - Prentice Hall, 2004*	2%
2	1.Explain cryptography as the basis of multimedia security. 2.Discusses the principles of cryptography: encryption, decryption, keys, and cryptographic algorithms. 3.Applying cryptography to protect various types of multimedia media	1.The accuracy of the explanation of cryptography as the basis of multimedia security 2.Ability to discuss cryptographic principles: encryption, decryption, keys, and cryptographic algorithms 3.The accuracy of applying cryptography in protecting various types of multimedia media	**Criteria:** Assessment rubric **Form of Assessment** : Participatory Activities	Presentations, discussions and questions and answers		**Material:** Cryptography **Bibliography:** *Frank Y. Shih, Digital Watermarking and Steganography: Fundamentals and Techniques, Second Edition, CRC Press, 2017*	2%
3	1.Explain the meaning and purpose of watermarking in multimedia security 2.Simulate watermarking methods and techniques for images, audio, and video	1.Accurate explanation of the meaning and purpose of watermarking in multimedia security 2.Ability to simulate watermarking methods and techniques for images, audio and video	**Criteria:** Assessment rubric **Form of Assessment** : Project Results Assessment / Product Assessment	Presentations, discussions and questions and answers		**Material:** Watermarking **Bibliography:** *Frank Y. Shih, Digital Watermarking and Steganography: Fundamentals and Techniques, Second Edition, CRC Press, 2017* **Material:** Image watermarking **Bibliography:** *Shivendra Shivani, Suneeta Agarwal, et al, Handbook of Image-based Security Techniques, Chapman and Hall/CRC; 1st edition, 2018*	7%
4	Presenting the results of a case study of the use of watermarking in copyright protection and authenticity of multimedia content	Ability to present case study results on the use of watermarking in copyright protection and authenticity of multimedia content	**Criteria:** Assessment rubric **Form of Assessment** : Project Results Assessment / Product Assessment	Presentations, discussions and questions and answers		**Material:** Watermarking **Bibliography:** *Frank Y. Shih, Digital Watermarking and Steganography: Fundamentals and Techniques, Second Edition, CRC Press, 2017*	2%

5	1. Explain the basic concepts of steganography and its differences from cryptography 2. Simulating steganography methods and techniques to hide information in multimedia media 3. Identifying the advantages and disadvantages of steganography in the context of multimedia security	1. Accurate explanation of the basic concepts of steganography and its differences with cryptography 2. Ability to simulate steganography methods and techniques to hide information in multimedia media 3. accuracy of identification. Strengths and weaknesses of steganography in the context of multimedia security	**Criteria:** Assessment rubric **Form of Assessment** : Project Results Assessment / Product Assessment	Presentations, discussions and questions and answers		**Material:** Steganography **Bibliography:** *Frank Y. Shih, Digital Watermarking and Steganography: Fundamentals and Techniques, Second Edition, CRC Press, 2017*	2%
6	1. Explains Digital Rights Management (DRM) in multimedia security 2. Explains the principles of DRM and how DRM protects copyright and manages access to multimedia content 3. Presents a case review of DRM implementation in the digital entertainment industry	1. The accuracy of the explanation of Digital Rights Management (DRM) in multimedia security 2. Accurate explanation of DRM principles and how DRM protects copyright and manages access to multimedia content 3. The ability to present a case review of DRM implementation in the digital entertainment industry	**Criteria:** Assessment rubric **Form of Assessment** : Project Results Assessment / Product Assessment	Presentations, discussions and questions and answers		**Material:** Digital Rights Protection (DRM) **References:** *Ze Nian Li & Andrew, Mark, Fundamentals Of Multimedia, Pearson Education International - Prentice Hall, 2004*	2%
7	1. Conduct a review of various types of security threats to multimedia systems, such as malware attacks, network attacks, and physical attacks 2. Presents Case studies of famous multimedia security attacks and their impact.	1. Accuracy of review results regarding various types of security threats to multimedia systems, such as malware attacks, network attacks, and physical attacks 2. Ability to present Case studies of famous multimedia security attacks and their impact	**Criteria:** Assessment rubric **Form of Assessment** : Project Results Assessment / Product Assessment	Presentations, discussions and questions and answers		**Material:** Security Threats in Multimedia Systems **Reference:** *Ze Nian Li & Andrew, Mark, Fundamentals Of Multimedia, Pearson Education International - Prentice Hall, 2004*	2%

8	Complete the Midterm Exam		**Form of Assessment** : Test	writing test		**Material:** meeting materials 1-7 **References:** *Ze Nian Li & Andrew, Mark, Fundamentals Of Multimedia, Pearson Education International - Prentice Hall, 2004* **Material:** Meeting materials 1-7 **References:** *Frank Y. Shih, Digital Watermarking and Steganography: Fundamentals and Techniques, Second Edition, CRC Press, 2017* **Material:** Meeting materials 1-7 **References:** *Shivendra Shivani, Suneeta Agarwal, et al, Handbook of Image-based Security Techniques, Chapman and Hall/CRC; 1st edition, 2018*	20%
9	1. Explains multimedia security testing and the methodology used 2. Identify the tools and techniques used in multimedia security testing 3. Demonstrate security testing on multimedia media case examples	1. Accuracy of explanation of multimedia security testing and methodology used 2. Accuracy of identification of tools and techniques used in multimedia security testing 3. Ability to demonstrate security testing on multimedia media case examples	**Criteria:** Assessment rubric **Form of Assessment** : Project Results Assessment / Product Assessment	Presentations, discussions and questions and answers		**Material:** Multimedia Security Testing **Bibliography:** *Ze Nian Li & Andrew, Mark, Fundamentals Of Multimedia, Pearson Education International - Prentice Hall, 2004*	5%

10	1. Describes strategies and tactics for detecting, preventing, and responding to security attacks on multimedia media 2. Explain the role of technology use and policy in responding to multimedia attacks 3. Implement multimedia attack handling in a real environment	1. Accurate explanation of strategies and tactics for detecting, preventing, and responding to security attacks on multimedia media 2. Accurate explanation of the role of technology use and policy in responding to multimedia attacks 3. Ability to implement multimedia attack handling in a real environment	**Form of Assessment** : Project Results Assessment / Product Assessment	Presentations, discussions and questions and answers			2%
11	1. Explain the importance of multimedia security policies in organizations and industry 2. Identify the components and elements that must be present in a multimedia security policy	1. Accurate explanation of the importance of multimedia security policies in organizations and industry 2. Accurately identifying components and elements that must be present in a multimedia security policy	**Form of Assessment** : Participatory Activities	Presentations, discussions and questions and answers		**Material:** Multimedia Security Policy **Bibliography:** *Ze Nian Li & Andrew, Mark, Fundamentals Of Multimedia, Pearson Education International - Prentice Hall, 2004*	2%
12	1. Review ethical issues related to multimedia security, such as privacy, misuse, and user responsibility. 2. Discuss ethical standards and best practices in managing multimedia security	1. Accurate review of ethical issues related to multimedia security, such as privacy, misuse, and user responsibility. 2. Ability to discuss ethical standards and best practices in managing multimedia security	**Criteria:** Assessment rubric **Form of Assessment** : Participatory Activities	Presentations, discussions and questions and answers		**Material:** Ethics in Multimedia Security **Bibliography:** *Ze Nian Li & Andrew, Mark, Fundamentals Of Multimedia, Pearson Education International - Prentice Hall, 2004*	2%
13	1. Conduct an overview of the latest trends and developments in multimedia security, such as the Internet of Things (IoT), artificial intelligence, and cloud computing 2. Explain the role of new technologies in improving or threatening multimedia security	1. Accurate review of the latest trends and developments in multimedia security, such as the Internet of Things (IoT), artificial intelligence, and cloud computing 2. Accurate explanation of the role of new technologies in enhancing or threatening multimedia security	**Criteria:** Assessment rubric **Form of Assessment** : Participatory Activities	Presentations, discussions and questions and answers		**Material:** Latest Challenges in Multimedia Security **Bibliography:** *Ze Nian Li & Andrew, Mark, Fundamentals Of Multimedia, Pearson Education International - Prentice Hall, 2004*	3%

14	Implement real cases of multimedia security incidents that attract public attention	accuracy of real ASUS implementation results regarding multimedia security incidents that attract public attention	**Criteria:** Assessment rubric **Form of Assessment** : Project Results Assessment / Product Assessment	project based learning		**Material:** Case Study **Bibliography:** *Shivendra Shivani, Suneeta Agarwal, et al, Handbook of Image-based Security Techniques, Chapman and Hall/CRC; 1st edition, 2018*	12%
15	Present projects or assignments that have been previously given to the class	presentation skills	**Criteria:** Assessment rubric **Form of Assessment** : Project Results Assessment / Product Assessment	project based learning		**Material:** Case Study **Bibliography:** *Shivendra Shivani, Suneeta Agarwal, et al, Handbook of Image-based Security Techniques, Chapman and Hall/CRC; 1st edition, 2018*	5%
16	Complete the Final Semester Exam	Accuracy in completing the Final Semester Examination	**Criteria:** Assessment rubric **Form of Assessment** : Test	Written test and presentation		**Material:** Meeting materials 9-15 **References:** *Shivendra Shivani, Suneeta Agarwal, et al, Handbook of Image-based Security Techniques, Chapman and Hall/CRC; 1st edition, 2018*	30%

Evaluation Percentage Recap: Project Based Learning

No	Evaluation	Percentage
1.	Participatory Activities	11%
2.	Project Results Assessment / Product Assessment	39%
3.	Test	50%
		100%

Notes

1. **Learning Outcomes of Study Program Graduates (PLO - Study Program)** are the abilities possessed by each Study Program graduate which are the internalization of attitudes, mastery of knowledge and skills according to the level of their study program obtained through the learning process.
2. **The PLO imposed on courses** are several learning outcomes of study program graduates (CPL-Study Program) which are used for the formation/development of a course consisting of aspects of attitude, general skills, special skills and knowledge.
3. **Program Objectives (PO)** are abilities that are specifically described from the PLO assigned to a course, and are specific to the study material or learning materials for that course.
4. **Subject Sub-PO (Sub-PO)** is a capability that is specifically described from the PO that can be measured or observed and is the final ability that is planned at each learning stage, and is specific to the learning material of the course.
5. **Indicators for assessing** ability in the process and student learning outcomes are specific and measurable statements that identify the ability or performance of student learning outcomes accompanied by evidence.
6. **Assessment Criteria** are benchmarks used as a measure or measure of learning achievement in assessments based on predetermined indicators. Assessment criteria are guidelines for assessors so that assessments are consistent and unbiased. Criteria can be quantitative or qualitative.
7. **Forms of assessment:** test and non-test.
8. **Forms of learning:** Lecture, Response, Tutorial, Seminar or equivalent, Practicum, Studio Practice, Workshop Practice, Field Practice, Research, Community Service and/or other equivalent forms of learning.
9. **Learning Methods:** Small Group Discussion, Role-Play & Simulation, Discovery Learning, Self-Directed Learning, Cooperative Learning, Collaborative Learning, Contextual Learning, Project Based Learning, and other equivalent methods.
10. **Learning materials** are details or descriptions of study materials which can be presented in the form of several main points and sub-topics.
11. **The assessment weight** is the percentage of assessment of each sub-PO achievement whose size is proportional to the level of difficulty of achieving that sub-PO, and the total is 100%.
12. TM=Face to face, PT=Structured assignments, BM=Independent study.