



RENCANA PEMBELAJARAN SEMESTER

Matakuliah	Kode Mata Kuliah	Rumpun Mata Kuliah	Bobot (SKS)		Semester	Tgl. Penyusunan		
Visualisasi Informasi	181665331	Organization	T = 2	P = 1	6	16 Maret 2023		
Pengesahan	Dosen Pengembangan RPS		Koordinator Rumpun Matakuliah		Ketua Program Studi			
	Farid Suryanto, S.Pd., MT.		Sri Handyaningsih, ST.,MT. Tawar, S.Si., M.Kom.					
Capaian Pembelajaran	CPL-Prodi yang dibebankan pada mata kuliah							
	CPL-06	Mampu memahami pengembangan aplikasi						
	CPL-08	Mampu mengimplementasikan hasil analisis dan perancangan Sistem informasi						
	Capaian Pembelajaran Mata Kuliah (CPMK)							
	CPMK 01	Mampu mengidentifikasi data untuk memenuhi kebutuhan organisasi. (CPL-06)						
	CPMK 02	Mampu menyusun penyelesaian masalah mengenai penyajian informasi organisasi dan mempertanggungjawabkan hasil pekerjaannya. (CPL-08)						
	CPMK 03	Mampu menyusun struktur data yang sesuai dengan kebutuhan organisasi. (CPL-06)						
	CPMK 04	Mampu membuat antarmuka penyajian data yang informatif, efisien, efektif, dan estetik dengan langkah-langkah kerja yang bermutu dan terukur. (CPL-08)						
	Kemampuan akhir tiap tahapan belajar (Sub-CPMK)							
	Sub-CPMK 01	Mahasiswa mampu menjelaskan dasar-dasar persepsi, penglihatan, dan representasi visual manusia. [C2] (CPMK 01) (P2, C2, A2)						
	Sub-CPMK 02	Mahasiswa mampu mendemonstrasikan cara yang efektif dalam menyajikan beberapa tipe data. [C4] (CPMK 01) (P2, C4, A2)						
	Sub-CPMK 03	Mahasiswa mampu menyajikan informasi dengan cara yang dapat dimengerti, efisien, efektif, dan estetik, untuk tujuan menjelaskan ide dan menganalisis data. [C4] (CPMK 02) (P2, C4, A2)						
	Sub-CPMK 04	Mahasiswa mampu menggunakan alat (seperti Python atau Javascript) untuk melakukan manipulasi data dasar seperti memfilter, menggabungkan, dan mengatur kumpulan data. [C6] (CPMK 03) (P2, C3, A2)						
	Sub-CPMK 05	Mahasiswa mampu membuat visualisasi grafis menggunakan alat visualisasi data untuk memenuhi kebutuhan organisasi [C6] (CPMK 04) (P4, C4, A4)						
	Sub-CPMK 06	Mahasiswa mahasiswa mampu mengembangkan visualisasi data interaktif untuk memeriksa dan mengeksplorasi data. [C6] (CPMK 04) (P2, C6, A3)						
	Sub-CPMK 07	Mahasiswa mampu mengekspresikan data dalam bentuk cerita yang menarik untuk memenuhi kebutuhan penyajian informasi organisasi. (CPMK 04) (P1, C6, A5)						
	Korelasi CPMK terhadap Sub-CPMK							
		Sub-CPMK 01	Sub-CPMK 02	Sub-CPMK 03	Sub-CPMK 04	Sub-CPMK 05	Sub-CPMK 06	Sub-CPMK 07
	CPMK 01	v	v					
	CPMK 02			v				
CPMK 03				v				
CPMK 04					v	v	v	
Deskripsi singkat Matakuliah	Mata kuliah visualisasi informasi adalah salah satu topik dalam rumpun bidang keilmuan data dan informasi yang bertujuan untuk memberikan pemahaman kepada mahasiswa mengenai teori, teknik, dan alat yang dapat digunakan untuk membuat penyajian data dan informasi untuk memenuhi kebutuhan organisasi. Dalam dunia industri, mata kuliah ini digunakan oleh data saintis untuk merancang visualisasi informasi yang efektif, efisien, dan estetik untuk memberikan kemudahan kepada para pemangku kepentingan dalam organisasi dalam pengambilan keputusan. Mata kuliah ini memerlukan pengetahuan dasar mengenai interaksi manusia dan komputer, basis data, pemrograman, dan struktur data.							



1-2	Mahasiswa mampu menjelaskan dasar-dasar persepsi, penglihatan, dan representasi visual manusia. [C2] (Sub-CPMK 01) (CPL-06)	<p>Visual Communication: This topic focuses on how to use visual elements to communicate ideas and information effectively, across a variety of media. It covers topics such as visual storytelling, layout and composition, typography, and design for different media.</p> <p>Human Perception and Design: This topic focuses on the underlying principles of human perception and how they can be applied in design.</p>	<p>Bentuk :</p> <ul style="list-style-type: none"> <li>• Kuliah</li> <li>-</li> <li>• Kuliah</li> </ul> <p>Metode :</p> <ul style="list-style-type: none"> <li>• Contextual Learning</li> </ul> <p>Pengalaman :</p> <p>Students are given the opportunity to apply their knowledge and skills to a real-world design challenge. This experience allows them to gain practical experience in visual communication while also developing critical thinking, collaboration, and problem-solving skills.</p>	180	<ul style="list-style-type: none"> <li>• Observasi</li> </ul>	<ul style="list-style-type: none"> <li>• Understand how layout and composition affect the viewer's perception of a design.</li> <li>• Understand typography and how to use it effectively in design.</li> <li>• Demonstrate an understanding of the basic principles of human perception, including how the brain processes visual information and how people perceive color, shape, and form.</li> <li>• Analyze the impact of human perception on design, including how design choices can influence how people perceive and interpret visual information.</li> <li>• Apply knowledge of human perception to design projects, including selecting appropriate colors, shapes, and other design elements to effectively communicate a message or idea to an audience.</li> </ul>	<ul style="list-style-type: none"> <li>• 10%</li> </ul>
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3-4	Mahasiswa mampu mendemonstrasikan cara yang efektif dalam menyajikan beberapa tipe data. [C4] (Sub-CPMK 02) (CPL-06)	<p>1) Data Visualization: This topic focuses on how to effectively communicate complex data through visual representations such as charts, graphs, and infographics. It covers topics such as data analysis, information design, and visual storytelling. Students in this course would learn how to create visualizations that are accurate, clear, and engaging.</p> <p>2) Presenting Data: This topic focuses on how to effectively present data in a variety of contexts, such as business presentations, academic papers, and reports. It covers topics such as data organization, data interpretation, and effective communication strategies. Students in this course would learn how to present data in a way that is clear, concise, and persuasive.</p>	<p>Bentuk :</p> <ul style="list-style-type: none"> <li>• Kuliah</li> <li>-</li> </ul> <p>Metode :</p> <ul style="list-style-type: none"> <li>• Self-Directed Learning</li> </ul> <p>Pengalaman :</p> <p>students could be given access to various resources such as online tutorials, datasets, and visualization tools, and they could be encouraged to explore and experiment with different techniques for creating and presenting visualizations based on their personal interests and learning styles. Students could also be tasked with setting their own goals and objectives, tracking their progress, and seeking feedback from peers or mentors, all while reflecting on their own learning and identifying areas for further improvement. This approach would allow students to take control of their own learning process and develop the skills and confidence needed to become self-directed learners in the future.</p>	180	<ul style="list-style-type: none"> <li>• Penugasan Terstruktur (Proyek)</li> </ul>	<ul style="list-style-type: none"> <li>• Students will be able to identify and select appropriate data visualization techniques based on the type and context of the data they are working with.</li> <li>• Students will be able to create effective and aesthetically pleasing data visualizations using various tools and techniques.</li> <li>• Students will be able to create effective and aesthetically pleasing data visualizations using various tools and techniques.</li> </ul>	<ul style="list-style-type: none"> <li>• 10%</li> </ul>
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5-6	Mahasiswa mampu menyajikan informasi dengan cara yang dapat dimengerti, efisien, efektif, dan estetis, untuk tujuan menjelaskan ide dan menganalisis data. [C4] (Sub-CPMK 03) (CPL-08)	<p>1) Strategies for Effective Information Presentation - This topic can explore the different methods and techniques that students can use to present information in a way that is understandable, efficient, effective, and aesthetic. The discussion can cover aspects such as the use of visual aids, effective communication, and the importance of structuring information in a logical and coherent manner. 2) The Role of Information Presentation in Idea Explanation and Data Analysis - This topic can delve into the significance of presenting information effectively in explaining ideas and analyzing data. The discussion can focus on how effective information presentation can help in the interpretation of data and how it can be used to make informed decisions. It can also explore the role of aesthetics in information presentation and how it can influence the perception of the presented information.</p>	<p>Bentuk :</p> <ul style="list-style-type: none"> <li>• Kuliah</li> <li>-</li> </ul> <p>Metode :</p> <ul style="list-style-type: none"> <li>• Small Group Discussion</li> </ul> <p>Pengalaman :</p> <p>students will have the opportunity to engage in interactive and collaborative learning, share their ideas and insights with their peers, and practice applying effective information presentation strategies in a supportive and dynamic environment.</p>	180	<ul style="list-style-type: none"> <li>• Non-Tes: Speaking Practice (Individual)</li> </ul>	<ul style="list-style-type: none"> <li>• Ability to identify effective information presentation strategies - Students should be able to recognize the different techniques and methods that can be used to present information effectively. They should be able to identify appropriate visual aids, use clear and concise language, and structure information in a logical and coherent manner.</li> <li>• Understanding the importance of aesthetics in information presentation - Students should have an understanding of the role of aesthetics in information presentation and how it can influence the perception of the presented information. They should be able to appreciate the importance of using appropriate colors, fonts, and images to create visually appealing presentations that effectively communicate the intended message.</li> <li>• Ability to apply effective information presentation techniques in data analysis and idea explanation - Students should be able to apply the strategies learned to present information effectively for the purpose of</li> </ul>	<ul style="list-style-type: none"> <li>• 10%</li> </ul>
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7,9	Mahasiswa mampu menggunakan alat (seperti Python atau Javascript) untuk melakukan manipulasi data dasar seperti memfilter, menggabungkan, dan mengatur kumpulan data. [C6] (Sub-CPMK 04) (CPL-06)	1) Introduction to Data Manipulation with JavaScript - This course can cover the basics of data manipulation using JavaScript. Students will learn how to use built-in methods to load and manipulate data sets, perform filtering, grouping, and merging of data, and use visualization tools to analyze and present data insights. 2) Data Visualization with JavaScript using Chart.js - This course can focus on the use of Chart.js, a popular JavaScript library for data visualization. Students will learn how to use Chart.js to create a variety of charts and graphs, including line charts, bar charts, pie charts, and scatter plots.	<p>Bentuk :</p> <ul style="list-style-type: none"> <li>• Kuliah</li> <li>-</li> </ul> <p>Metode :</p> <ul style="list-style-type: none"> <li>• Project Based Learning</li> </ul> <p>Pengalaman :</p> <p>This course uses project-based learning to teach students how to use JavaScript for data manipulation and visualization. Students will work on a series of real-world projects that require them to apply their knowledge to unique problems, such as building a data-driven web application or visualizing social media trends. Throughout the course, they will collaborate with peers, manage their time effectively, and apply critical thinking skills to solve problems. By the end of the course, students will have a strong foundation in data manipulation and visualization using JavaScript, as well as experience working on real-world projects that demonstrate their skills and knowledge.</p>	180	<ul style="list-style-type: none"> <li>• Capstone Project</li> </ul>	<ul style="list-style-type: none"> <li>• Ability to manipulate and filter data using JavaScript - Students should be able to use built-in methods and libraries to perform basic data manipulation tasks such as filtering, sorting, and merging data sets. They should also be able to apply these techniques to real-world data sets to extract meaningful insights and patterns.</li> <li>• Ability to create interactive data visualizations using JavaScript - Students should be able to create a variety of charts and graphs using JavaScript libraries such as Chart.js and D3.js. They should be able to customize the appearance and behavior of these visualizations to communicate insights and engage users.</li> <li>• Ability to integrate data manipulation and visualization techniques into web applications - Students should be able to integrate data manipulation and visualization techniques into web applications using popular JavaScript frameworks such as React and Angular. They should be able to build dynamic and interactive user interfaces that leverage the power of data to enhance the</li> </ul>	<ul style="list-style-type: none"> <li>• 25%</li> </ul>
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10-11	Mahasiswa mampu membuat visualisasi grafis menggunakan alat visualisasi data untuk memenuhi kebutuhan organisasi [C6] (Sub-CPMK 05) (CPL-08)	1) Metode pengembangan visualisasi informasi, 2) Best practice pengembangan visualisasi informasi.	<p>Bentuk :</p> <ul style="list-style-type: none"> <li>• Kuliah Penjelasan di kelas</li> <li>• Tutorial Video tutorial</li> </ul> <p>Metode :</p> <ul style="list-style-type: none"> <li>• Project Based Learning Proyek kecil pengembangan visualisasi iformasi.</li> </ul> <p>Pengalaman :</p> <p>By learning about the methods and best practices of data visualization development through project-based learning, students will gain a deep understanding of how to collect, organize, and clean data, as well as how to choose the appropriate visualization techniques to represent that data. They will also learn how to design and develop effective data visualizations that are engaging, informative, and easy to understand. Through hands-on projects, students will have the opportunity to apply their knowledge and skills to real-world scenarios, such as analyzing business or social data, and creating visualizations that can inform or influence decision-making.</p>	180	• Observasi	<ul style="list-style-type: none"> <li>• Data visualization proficiency: This indicator would measure the student's ability to design and develop effective data visualizations using appropriate tools and techniques.</li> <li>• Data analysis skills: This indicator would assess the student's ability to collect, organize, and clean data in order to create accurate and informative visualizations.</li> <li>• Project outcomes: This indicator would evaluate the overall effectiveness of the student's project-based learning experience in data visualization development.</li> </ul>	• 20%
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12-13	Mahasiswa mahasiswa mampu mengembangkan visualisasi data interaktif untuk memeriksa dan mengeksplorasi data. [C6] (Sub-CPMK 06) (CPL-08)	1) Interactive Data Visualization Design: This course would focus on the principles and techniques of designing effective and engaging interactive data visualizations. 2) Data Visualization for Exploratory Analysis: This course would focus on the techniques and tools used for exploratory data analysis using interactive visualizations.	Bentuk : <ul style="list-style-type: none"> <li>Kuliah</li> </ul> Penjelasan tentang desain visualisasi data interaktif.  Metode : <ul style="list-style-type: none"> <li>Project Based Learning</li> </ul> Pengalaman : Through project-based learning focused on developing interactive data visualizations for exploring data, students will gain hands-on experience in designing, developing, and interpreting complex visualizations. They will also develop critical data exploration and analysis skills, while working with real-world data and popular data visualization tools.	180	<ul style="list-style-type: none"> <li>Penugasan Terstruktur (Proyek)</li> </ul>	<ul style="list-style-type: none"> <li>Interactive Data Visualization Development: This indicator would measure the student's proficiency in developing effective interactive data visualizations.</li> <li>Data Exploration and Analysis Skills: This indicator would assess the student's ability to explore and analyze data using interactive data visualizations.</li> <li>Project Outcomes: This indicator would evaluate the overall effectiveness of the student's project-based learning experience in developing interactive data visualizations.</li> </ul>	<ul style="list-style-type: none"> <li>15%</li> </ul>
14	Mahasiswa mampu mengekspresikan data dalam bentuk cerita yang menarik untuk memenuhi kebutuhan penyajian informasi organisasi. (Sub-CPMK 07) (CPL-08)	Mastering Data Storytelling: Crafting a Compelling Narrative from Data. Data storytelling is the art of using data to communicate a compelling narrative that resonates with the audience.	Bentuk : <ul style="list-style-type: none"> <li>Kuliah</li> </ul> -  Metode : <ul style="list-style-type: none"> <li>Contextual Learning</li> </ul> -  Pengalaman : -	90	<ul style="list-style-type: none"> <li>Observasi</li> </ul>	<ul style="list-style-type: none"> <li>Mahasiswa mampu membuat narasi yang efektif berdasarkan data.</li> <li>Mahasiswa mampu menggunakan teknik-teknik storytelling untuk menjelaskan wawasan data.</li> </ul>	<ul style="list-style-type: none"> <li>10%</li> </ul>
Total Bobot							100%

Catatan :

Ada 2 pertemuan selain yang tersebut di table, ada 2 pertemuan tambahan (1) Ujian Tengah Semester (UTS) / Evaluasi Tengah Semester (ETS). (2) Ujian Akhir Semester (UAS) / Evaluasi Akhir Semester (EAS)