

RENCANA PEMBELAJARAN SEMESTER

PROGRAM STUDI S2 SAINS DATA

FAKULTAS SAINS DAN MATEMATIKA Universitas Kristen Satya Wacana

Form						
Semester	Ganjil / Genap / Antara					
Mata Kuliah	BD047 SOCIO-CULTURE-EDUCATION INTELLIGENCE (SCEI)					
Beban	2	SKS	T/A/P:	1/1/0	W/P:	Pilihan
Dosen Pengampu	1. Prof. Hanna Arini Parhusip, M.Sc.nat 2. Dr. Suryasatriya Trihandaru, M.Sc.nat 3. Prof. Dr. Adi Setiawan, M.Sc.					

A. Program Learning Outcome / Capaian Pembelajaran Lulusan (CPL)

CPL01	Mampu menunjukkan sikap bertanggung jawab atas pekerjaan di bidang keahliannya secara mandiri.
CPL02	Menguasai konsep teoretis bidang pengetahuan dan keterampilan tertentu secara umum dan khusus untuk menyelesaikan masalah secara prosedural sesuai dengan lingkup pekerjaannya
CPL03	Mampu menganalisis kebutuhan perangkat lunak untuk menghasilkan spesifikasi yang tepat.
CPL04	Mampu merancang perangkat lunak yang sesuai dengan spesifikasi dan kebutuhan pengguna.
CPL05	Mampu mengimplementasikan perangkat lunak berdasarkan spesifikasi yang telah dirancang.
CPL06	Mampu berkomunikasi secara efektif, baik lisan maupun tulisan, dalam konteks profesional.
CPL07	Mampu bekerjasama dalam tim serta menunjukkan kemampuan kepemimpinan dalam konteks kerja kelompok.
CPL08	Mampu mengintegrasikan prinsip etika dan tanggung jawab sosial dalam pengambilan keputusan profesional.

B. Course Learning Outcome / Capaian Pembelajaran Mata Kuliah (CPMK)

CPMKBD04711	(CPL01) Mampu menunjukkan tanggung jawab dalam menganalisis permasalahan sosial, budaya, dan pendidikan berbasis data secara mandiri.
CPMKBD04742	(CPL04) Mampu merancang sistem kecerdasan sosial, budaya, dan pendidikan sesuai kebutuhan pengguna.
CPMKBD04763	(CPL06) Mampu mengomunikasikan hasil analisis permasalahan sosial, budaya, dan pendidikan berbasis data secara efektif.
CPMKBD04781	(CPL08) Mampu mengintegrasikan nilai etika dan tanggung jawab sosial dalam analisis permasalahan sosial, budaya, dan pendidikan berbasis data.
CPMKBD04761	(CPL06) Mampu menyampaikan gagasan, hasil analisis, dan rekomendasi berbasis data sosial dan pendidikan secara sistematis.

C. Prerequisite/Corequisite Courses /Prasyarat Mata Kuliah

Code	Course Name

D. Description/Deskripsi

This course introduces data science applications for social, cultural, and educational problems, covering: social media analytics and sentiment analysis, social network analysis, learning analytics and educational data mining, text mining for social/cultural content, survey data analysis, designing data-driven solutions, educational assessment analytics, cultural data analysis, data-driven policy analysis, and communicating social science findings through data storytelling.

Mata kuliah ini membahas penerapan data science untuk permasalahan sosial, budaya, dan pendidikan, meliputi: social media analytics dan sentiment analysis, social network analysis, learning analytics dan educational data mining, text mining untuk konten sosial/budaya, analisis data survei, perancangan solusi berbasis data, educational assessment analytics, analisis data budaya, analisis kebijakan berbasis data, serta komunikasi temuan riset sosial melalui storytelling with data.

E. Learning Stage/Tahap Pembelajaran

We ek	Final Ability	Material	Methods	Dura tion	Indicators	Assesment
1	<i>Have broad knowledge of Socio-Culture-Education Intelligence: scope and applications.</i> Memiliki pengetahuan luas tentang Socio-Culture-Education Intelligence: ruang lingkup dan aplikasinya.	Introduction to Socio-Culture-Education Intelligence: Scope & Applications	Presentation Discussion Demonstration Practicum	100'	Provides information about SCEI scope and applications; Discussion	Discussion
2	<i>Master social media analytics and sentiment analysis.</i> Menguasai social media analytics dan sentiment analysis.	Social Media Analytics & Sentiment Analysis	Presentation Discussion Demonstration Practicum	100'	Obtain information about social media analytics and sentiment analysis; Discussion and Practicum	Discussion
3	<i>Master Social Network Analysis (SNA).</i> Menguasai Social Network Analysis (SNA).	Social Network Analysis (SNA)	Presentation Discussion Demonstration Practicum	100'	Obtain information about social network analysis; Discussion and Practicum	Task: Submit a practicum report.
4	<i>Master practical work related to social media analytics, sentiment analysis, and SNA.</i>	Practicum/Case Study related to Meeting 1-3	Presentation Discussion Demonstration Practicum	100'	Carrying out practicum and tutorials related to Meeting 1 to Meeting 3	Practical Assignment /Report - CPMK1 (20%)

	Menguasai praktikum terkait social media analytics, sentiment analysis, dan SNA.					
5	<i>Master learning analytics and educational data mining.</i> Menguasai learning analytics dan educational data mining.	Learning Analytics & Educational Data Mining	Presentation Discussion Demonstration Practicum	100'	Obtain information about learning analytics and educational data mining; Discussion and Practicum	Discussion
6	<i>Master text mining for social and cultural content.</i> Menguasai text mining untuk konten sosial dan budaya.	Text Mining for Social & Cultural Content	Presentation Discussion Demonstration Practicum	100'	Obtain information about text mining for social/cultural content; Discussion and Practicum	Discussion
7	<i>Master survey and questionnaire data analysis for social research.</i> Menguasai analisis data survei dan kuesioner untuk riset sosial.	Survey & Questionnaire Data Analysis for Social Research	Presentation Discussion Demonstration Practicum	100'	Obtain information about survey data analysis; Discussion and Practicum	Task: Submit a practicum report.
8	<i>Master practical work related to learning analytics, text mining, and survey data analysis.</i> Menguasai praktikum terkait learning analytics, text mining, dan analisis data survei.	Practicum/Case Study related to Meeting 5-7	Presentation Discussion Demonstration Practicum	100'	Carrying out practicum and tutorials related to Meeting 5 to Meeting 7	Practical Assignment /Report - CPMK3 (20%)
9	<i>Master the design of data-driven solutions for social, cultural, and educational problems.</i> Menguasai perancangan solusi berbasis data untuk permasalahan sosial, budaya, dan pendidikan.	Designing Data-Driven Solutions for Social/Cultural/Educational Problems	Presentation Discussion Demonstration Practicum	100'	Obtain information about designing data-driven social solutions; Discussion and Practicum	Discussion
10	<i>Master educational assessment analytics.</i> Menguasai educational assessment analytics.	Educational Assessment Analytics	Presentation Discussion Demonstration Practicum	100'	Obtain information about educational assessment analytics; Discussion and Practicum	Discussion
11	<i>Master cultural data analysis and digital humanities.</i> Menguasai analisis data budaya dan digital humanities.	Cultural Data Analysis & Digital Humanities	Presentation Discussion Demonstration Practicum	100'	Obtain information about cultural data analysis and digital humanities; Discussion and Practicum	Task: Submit a practicum report.
12	<i>Master practical work related to designing solutions,</i>	Practicum/Case Study related to Meeting 9-11	Presentation Discussion Demonstration	100'	Carrying out practicum and tutorials related to	Practical Assignment /Report -

	educational assessment, and cultural data analysis. Menguasai praktikum terkait perancangan solusi, educational assessment, dan analisis data budaya.		Practicum		Meeting 9 to Meeting 11	CPMK2 (20%)
13	<i>Master data-driven policy analysis for the social and education sector.</i> Menguasai analisis kebijakan berbasis data untuk sektor sosial dan pendidikan.	Data-Driven Policy Analysis for Social/Education Sector	Presentation Discussion Demonstration Practicum	100'	Obtain information about data-driven policy analysis; Discussion and Practicum	Discussion
14	<i>Master communicating social science findings through storytelling with data.</i> Menguasai komunikasi temuan riset sosial melalui storytelling with data.	Communicating Social Science Findings: Storytelling with Data	Presentation Discussion Demonstration Practicum	100'	Obtain information about storytelling with data; Discussion and Practicum	Practical Assignment /Report - CPMK5 (20%)
15	<i>Able to design and build an applied socio-culture-education intelligence project.</i> Mampu merancang dan membangun proyek socio-culture-education intelligence secara terapan.	PROJECT WORK	Project Work	100'	Design and build a socio-culture-education intelligence project	Final Project Work
16	<i>Able to present and defend the socio-culture-education intelligence project.</i> Mampu mempresentasikan dan mempertanggungjawabkan proyek socio-culture-education intelligence.	PROJECT PRESENTATION	Presentation Discussion	100'	Presenting the socio-culture-education intelligence project	Project Presentation - CPMK4 (20%)

Note/Catatan untuk Tabel E.

Abbreviation	Description
CPL	Capaian Pembelajaran Lulusan / Program Learning Outcome
CPMK	Capaian Pembelajaran Mata Kuliah / Course Learning Outcome
SCEI	Socio-Culture-Education Intelligence
SNA	Social Network Analysis

F. Learning Media and Tools

Python/R (NLP, social network analysis libraries), survey tools, Computer, Flearn (Online Learning Media), WAG and Google Meet/Zoom.

G. Student Learning Experience/Portfolio

Students gain experience in analyzing social, cultural, and educational data, designing data-driven solutions, and communicating findings effectively to stakeholders.

Mahasiswa memperoleh pengalaman dalam menganalisis data sosial, budaya, dan pendidikan, merancang solusi berbasis data, serta mengomunikasikan temuan secara efektif kepada pemangku kepentingan.

H. References

1. [Siemens, G. \(2013\). Learning Analytics: The Emergence of a Discipline. American Behavioral Scientist, 57\(10\), 1380-1400.](#)
2. [Provost, F., & Fawcett, T. \(2013\). Data Science for Business: What You Need to Know about Data Mining and Data-Analytic Thinking. O'Reilly Media.](#)

I. Authorization

Pengembang	Tanggal	Koordinator	Kaprodi
Dr. Suryasatriya Trihandaru, M.Sc.nat	8 Agustus 2026	Prof. Hanna Arini Parhusip, M.Sc.nat	Prof. Hanna Arini Parhusip, M.Sc.nat