CURRICULUM

INFORMATION TECHNOLOGY : AI & DATA SCIENCE

SWISS GERMAN UNIVERSITY

DOUBLE DEGREE | Academic Year 2023/2024

SEMESTER 1	SKS	ECTS
English 1	2	3
Algorithms & Object-Oriented Programming	4	6
Data Science Programming Language	2	3
Relational Database Design & Lab	3	4
Discrete Mathematics	2	3
Web Design Fundamental	2	3
Analytical & Creative Thinking	3	4
Statictics for Data Science	2	3
Linux Fundamental & Computer Network	2	3
Total Mandatory	22	32
Extracurricular Courses		
German Language and Culture 1	2	0
TOTAL	24	32

SEMESTER 2	SKS	ECTS
English 2	2	3
Data Structures & Algorithms	3	4
Server-side Web Programming	4	6
Web Development Life Cycle Project	2	3
Introduction to Entrepreneurship	2	3
Ethics & Religious Philosophy	2	3
Linear Algebra for Data Science	2	3
Probability for Data Science	2	3
System Admin & Maintenance	2	3
Total Mandatory	21	31
Extracurricular Courses		
German Language and Culture 2	2	0
TOTAL	23	31

SEMESTER 3	SKS	ECTS
English 3	2	3
Client-side Front-End Web Development	2	3
Personal & Profesional Development	4	6
Non-Relational Database Design & Lab	3	4
Advanced Object-Oriented Programming	3	4
Computer Security & Lab	3	4
UI/UX Design & Evaluation	2	3
Back-end System Administration	3	4
Total Mandatory	22	31
Extracurricular Courses		
German Language and Culture 3	2	0
TOTAL	24	31

SEMESTER 4	SKS	ECTS
English 4	2	3
Back-End Web Development & tools	3	4
Framework-based Web Programming	3	4
Pancasila & Civic	3	4
Network Security & Lab	3	4
Mobile Web Service & API (Middleware)	2	3
Introduction to Artificial Intelligence and Laboratory	3	5
Math for Machine Learnings	3	5
Total Mandatory	22	32
Extracurricular Courses		
German Language and Culture 4	2	0
TOTAL	24	32

S E M E S T E R 5	SKS	ECTS
Internship 1	2	10
Indonesian Language	2	3
Cross-Platform Mobile App Development	2	3
Pattern Recognition & Image Processing	3	4
Big Data Infrastructure	2	3
Cross Study Program or Faculty Elective Course	2	3
TOTAL	13	26

S E M E S T E R 6	SKS	ECTS
Intenship 2	6	20
JOINT DEGREE SUBJECTS		
ERP and Lab	2	3
Current Developments in Business IT	1	2
Challenges in Int. Management (Globalization and CSR)	1	2
SINGLE DEGREE SUBJECTS	4	7
Cross Study Program or Faculty Elective Course	4	7
TOTAL	10	27

S E M E S T E R 7	SKS	ECTS
English 5	2	3
Research Methodology	2	3
Data Science using Python	2	3
Data Mining	3	4
Native Mobile App Development	3	5
Secure Software Development Life Cycle	2	3
Machine Learning & Deep Learning	4	5
Big Data Analytics	3	5
TOTAL	21	31

S E M E S T E R 8	SKS	ECTS
Thesis	6	20
Professional Competence Assessment (PCA)	3	4
Character and Professional Development Program (CPDP)	2	3
Cross Study Program or Faculty Elective Course	2	3
TOTAL	13	30

Total Compulsory **: 144 SKS**
Total ECTS **: 240 ECTS**
SKS **: Satuan Kredit Semester**
ECTS **: European Credit Transfer System**

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