Data Science and Artificial Intelligence

Introductory Lecture

Prof. dr Amila Akagić
Faculty of Electrical Engineering
University of Sarajevo

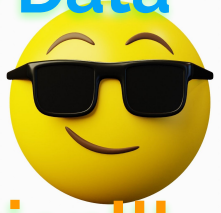
DSAI
DATA SCIENCE
& ARTIFICIAL INTELLIGENCE

Key Facts

Three-Year Bachelor's Study Program

180 ECTS	6 Semesters	English Language	Full time	Distance Learning

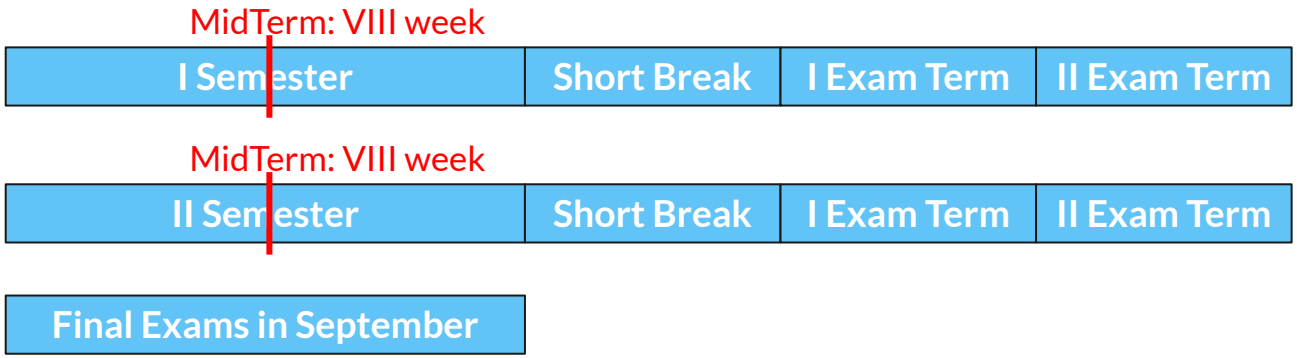
Title after graduation: Bachelor of Engineering - Data Science and Artificial Intelligence



ETF is the first to offer such a program in the region!!!

ETF Building

Academic Year



I Semester (Winter Semester):
06.10.2024 - 17.01.2025.

II Semester (Summer Semester):
03.03.2025 - 13.06.2025.

MidTerm Exams

I Semester (Winter Semester):
VIII Week

II Semester (Summer Semester):
VIII Week

Please remember: Count weeks from the start of the semester!
You are at the University now and this is how it works.

Final Exams

4 Terms per course!

I Semester (Winter Semester):
I term: 27.01.-07.02.2025.
II term: 10.02.-21.02.2025.

II Semester (Summer Semester):
I term: 23.06.-04.07.2025.
II term: 07.07- 18.07.2025.

Final Exams in September
III term: 25.08. - 05.09.2025.
IV term: 08.09.-19.09.2025.

Winter Semester Schedule

Start Time	Time Blocks
9:00 AM	1h

DSAI Class Schedule

Winter Semester 2024

TIME	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
9:00 AM							
10:00 AM							
11:00 AM							
12:00 PM		S: Business English (A4)	L: Programming in Python (A4)	L: Programming in Python (A4)	T: Mathematics for AI 1 (A4)		
1:00 PM		S: Business English (A4)	L: Programming in Python (A4)	L: Programming in Python (A4)	T: Mathematics for AI 1 (A4)		
2:00 PM		L: Mathematics for AI 1 (A4)	S: Foundations of Innovation (A4)	L: Introduction to Autonomous Systems (A4)	L: Mathematics for AI 1 (A4)	L: Fundamental Concepts of AI (A4)	
3:00 PM		L: Mathematics for AI 1 (A4)	S: Foundations of Innovation (A4)	L: Introduction to Autonomous Systems (A4)	L: Mathematics for AI 1 (A4)	L: Fundamental Concepts of AI (A4)	
4:00 PM				L: Introduction to Autonomous Systems (A4)		L: Fundamental Concepts of AI (A4)	
5:00 PM							
6:00 PM							
7:00 PM							
8:00 PM							

Legend

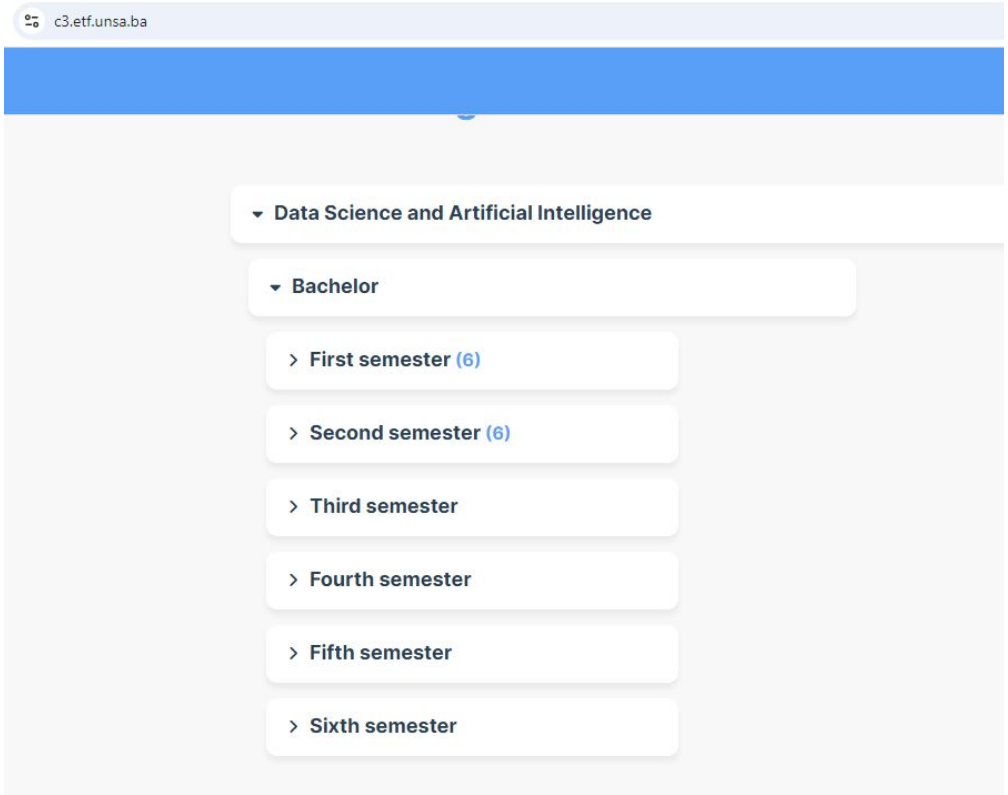
L: *Lecture*

S: *Seminar*

T: *Tutorial*

Courseware: All course materials

https://c3.etf.unsa.ba



Courseware: All important news

https://c3.etf.unsa.ba

Site announcements

Unsubscribe from forum

Add a new topic

DSAI Winter Semester 2024 Schedule & Updates
by Amila Akagić - Saturday, 5 October 2024, 9:53 AM

Dear DSAI students,

It is our great pleasure to welcome you to the "*Data Science and Artificial Intelligence*" study program at the Faculty of Electrical Engineering.

Attached, you will find the schedule for the Winter Semester. Classes begin on **Monday, October 7th, 2024**. In the first week, you will have all classes as scheduled.

Additionally, we will have an **Introductory Lecture**.
Join us on Monday in Classroom A4 from **11:00 AM to 11:30 AM** for an introductory lecture where we will cover essential aspects of studying at the Faculty of Electrical Engineering.

Group Photo:
Immediately following the lecture, we will gather for a **group photo at 11:30 AM** in front of the Faculty. I encourage everyone to participate, as it's a great opportunity to commemorate this special occasion together.

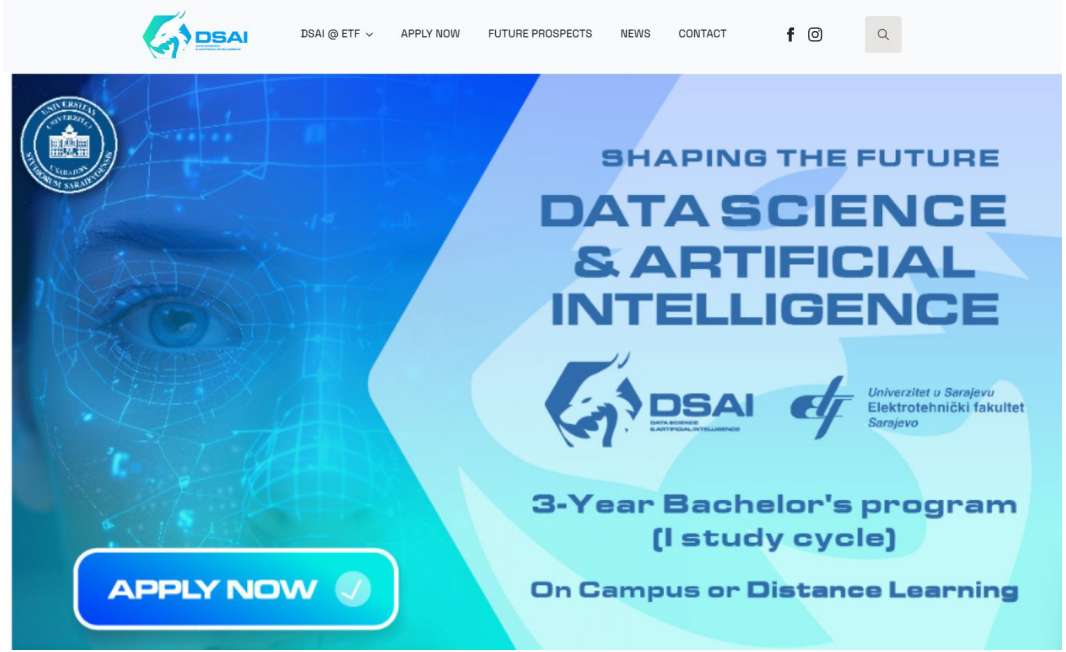
Schedule Updates:
Please note a slight change in our schedule for the first week:

- The course **Fundamental Concepts of AI** will be held on Tuesday from 2:00 PM to 4:00 PM.
- The course **Foundations of Innovation** will take place on Friday from 2:00 PM to 4:00 PM.

See you on Monday!

DSAI Website

https://dsai.etf.unsa.ba



https://www.facebook.com/dsaietf

https://www.instagram.com/dsaietf/

DSAI Curriculum: I Semester

Semester: First semester

	List of Courses							
No.	**Course name**	**Course Code**	**ECTS**	**H/S**	**L**	**T**	**E**	**S**
1.	**Fundamental Concepts of Artificial Intelligence**	ETF FCAI I-1150	5	50	30	0	20	0
2.	**Programming in Python**	ETF PP I-1180	8	80	50	0	30	0
3.	**Mathematics for AI I**	ETF MAI-I I-1170	7	70	50	20	0	0
4.	**Introduction to Autonomous Systems**	ETF IAS I-1150	5	50	30	0	20	0
5.	**Foundations of Innovation**	ETF FI I-1130	3	30	30	0	0	0
6.	**Business English**	ETF BE I-1120	2	20	0	0	0	20
	Total:		**30**	**300**				

Legend:
H/S - Total number of hours
L - Lectures
E - Exercises
T - Tutorials
S - Seminar

DSAI Curriculum: II Semester

Semester: Second semester

	List of Courses							
No.	**Course name**	**Course Code**	**ECTS**	**H/S**	**L**	**T**	**E**	**S**
1.	**Practical Application of Artificial Intelligence**	ETF PAAI I-1250	5	50	30	0	20	0
2.	**Algorithms and Data Structures I**	ETF ADS-I I-1250	5	50	30	0	20	0
3.	**Probability and Statistics for AI**	ETF PSAI I-1250	5	50	30	10	10	0
4.	**Mathematical Logic**	ETF ML I-1250	5	50	30	20	0	0
5.	**Mathematics for AI II**	ETF MAI-II I-1270	7	70	40	30	0	0
6.	**Financing of Innovation**	ETF FI I-1230	3	30	30	0	0	0
	Total:		**30**	**300**				

Legend:
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E - Exercises
T - Tutorials
S - Seminar

DSAI Curriculum: III Semester

Semester: Third semester

	List of Courses							
No.	**Course name**	**Course Code**	**ECTS**	**H/S**	**L**	**T**	**E**	**S**
1.	**Artificial Intelligence**	ETF AI I-2350	5	50	30	0	20	0
2.	**Algorithms and Data Structures II**	ETF ADS-II I-2350	5	50	30	0	20	0
3.	**Introduction to Data Analysis and Visualisation**	ETF IDAV I-2350	5	50	30	0	20	0
4.	**Mathematics for AI III**	ETF MAI-III I-2370	7	70	50	20	0	0
5.	**Basic Scientific and Soft Skills**	ETF BSSS I-2330	3	30	0	0	0	30
6.	**Machine Learning: Supervised Techniques**	ETF ML-ST I-2350	5	50	30	0	20	0
	Total:		**30**	**300**				

Legend:
H/S - Total number of hours
L - Lectures
E - Exercises
T - Tutorials
S - Seminar

DSAI Curriculum: IV Semester

Semester: Fourth semester

	List of Courses							
No.	**Course name**	**Course Code**	**ECTS**	**H/S**	**L**	**T**	**E**	**S**
1.	**Seminar in AI**	ETF SAI I-2440	4	40	0	0	0	40
2.	**Computational Data Analytics**	ETF CDA I-2450	5	50	30	0	20	0
3.	**Formal Models**	ETF FM I-2450	5	50	30	0	20	0
4.	**Numerical Optimization**	ETF NO I-2460	6	60	40	0	20	0
5.	**Machine Learning: Unsupervised Techniques**	ETF ML-UT I-2450	5	50	30	0	20	0
6.	**Machine Learning and Pattern Recognition**	ETF MLPR I-2450	5	50	30	0	20	0
	Total:		**30**	**300**				

Legend:
H/S - Total number of hours
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E - Exercises
T - Tutorials
S - Seminar

DSAI Curriculum: V Semester

Semester: Fifth semester

	List of Courses							
No.	**Course name**	**Course Code**	**ECTS**	**H/S**	**L**	**T**	**E**	**S**
1.	**Applied AI**	ETF AAI I-3570	7	70	0	0	0	70
2.	**Learning from User-Generated Data**	ETF LUGD I-3550	5	50	30	0	20	0
3.	**Dynamic Modeling and Simulation**	ETF DMS I-3550	5	50	30	0	20	0
4.	**Responsible AI**	ETF RAI I-3530	3	30	0	0	0	30
5.	**Robotics Fundamentals**	ETF RF I-3550	5	50	30	0	10	10
6.	**Reinforcement Learning**	ETF RL I-3550	5	50	30	0	20	0
	Total:		**30**	**300**				

Legend:
H/S - Total number of hours
L - Lectures
E - Exercises
T - Tutorials
S - Seminar

DSAI Curriculum: VI Semester

Semester: Sixth semester

	List of Courses							
No.	**Course name**	**Course Code**	**ECTS**	**H/S**	**L**	**T**	**E**	**S**
1.	**Spectral Analysis and AI**	ETF SAAI I-3630	3	30	20	0	10	0
2.	**Elective course 1**		5	50	30	0	20	0
3.	**Elective course 2**		5	50	30	0	20	0
4.	**Elective course 3**		5	50	30	0	20	0
5.	**Elective Seminar**		3	30	0	0	0	30
6.	**Bachelor's Thesis**		9	90	0	0	0	0
	Total:		**30**	**300**				

Legend:
H/S - Total number of hours
L - Lectures
E - Exercises
T - Tutorials
S - Seminar

DSAI Curriculum: VI Semester

	List of Elective Courses							
No.	**Course name**	**Course Code**	**ECTS**	**H/S**	**L**	**T**	**E**	**S**
1.	**Multimedia Systems**	ETF MS I-3650	5	50	30	0	20	0
2.	**Functional Programming**	ETF FP I-3650	5	50	30	0	20	0
3.	**Introduction to Natural Language Processing**	ETF INLP I-3650	5	50	30	0	20	0
4.	**Introduction to Distributed Systems and Cloud Computing**	ETF IDSCC I-3650	5	50	30	0	20	0
5.	**RoboCup@Home**	ETF RCH I-3650	5	50	30	0	20	0
6.	**Introduction to the Theory of Computation**	ETF ITC I-3650	5	50	30	0	20	0
7.	**Databases Systems**	ETF DS I-3650	5	50	30	0	20	0
8.	**Embedded Systems**	ETF ES I-3650	5	50	30	0	20	0
9.	**Computational Geometry**	ETF CG I-3650	5	50	30	0	20	0
10.	**Information Theory**	ETF IT I-3650	5	50	30	0	20	0

Legend:

DSAI Curriculum: VI Semester

	List of Elective Seminars							
No.	**Course name**	**Course Code**	**ECTS**	**H/S**	**L**	**T**	**E**	**S**
1.	**Entrepreneurship**	ETF E I-3630	3	30	0	0	0	30
2.	**AI in Marketing and Sales: Understanding Professional Users**	ETF AIMS-UPS I-3630	3	30	0	0	0	30
3.	**Data Protection and Privacy Regulation**	ETF DPPR I-3630	3	30	0	0	0	30
4.	**Societal Impact of AI**	ETF SIAI I-3630	3	30	0	0	0	30
5.	**Intellectual Property Fundamentals**	ETF IPF I-3630	3	30	0	0	0	30

Legend:
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DSAI Curriculum: I Semester

I semestar	Academic Staff
Fundamental Concepts of Artificial Intelligence	Prof. Dr. Amila Akagic & Prof. Dr. Emir Turajlić
Programming in Python	Prof. Dr. Izudin Dzafic
Mathematics for AI	Prof. Dr. Senada Kalabusic
Introduction to Autonomous Systems	Doc. Dr. Senka Krivic
Foundations of Innovation	Prof. Dr. Amila Pilav Velic & Prof. Dr. Iza Razija Mesevic
Business English	Prof. Dr. Nadira Aljovic

Prof. Dr. Amila Akagic

"In an era where data shapes our reality and artificial intelligence redefines possibilities, our Data Science and AI program stands at the forefront of innovation. This program is designed to equip students with the skills to decode complex data patterns and drive the AI revolution. Join us to be part of a future where your expertise will not only create groundbreaking solutions but also generate new opportunities and transform industries for generations to come."

Prof. Dr. Emir Turajlic

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Business English	**Prof. Dr. Nadira Aljovic**

Prof. Dr. Izudin Džafić

"In a rapidly evolving digital landscape, the mastery of programming, system modeling, and data synthesis is essential for shaping the future. Our Data Science and Artificial Intelligence program is meticulously crafted to empower students with these crucial skills. By delving into the realms of advanced coding, creating sophisticated models, and synthesizing vast data sets, you will be at the forefront of innovation. Join us to lead the charge in transforming industries, driving technological progress, and creating the jobs of tomorrow for future generations."

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Business English	**Prof. Dr. Nadira Aljovic**

Prof. Dr. Senada Kalabušić

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Doc. Dr. Senka Krivić

"As a lecturer in the Data Science and Artificial Intelligence program I am proud to highlight the significance of our curriculum. This program is a game-changer, equipping students with cutting-edge skills in innovation, machine learning, deep learning, and big data analytics. Our hands-on projects and industry partnerships ensure that graduates are ready to tackle real-world challenges and lead AI revolution. If you're looking to build a future in tech, this is the place to be!"

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Prof. Dr. iur. Iza Razija Mešević

"By introducing this pioneering curriculum, the ETF Sarajevo is aiming toward educating future industry leaders in the field of data science and AI in the Western Balkans and beyond. This program is also positioning Bosnia and Herzegovina in the group of countries, which have recognized current technology trends and wish to shape them and not only follow them."

DSAI Curriculum: I Semester

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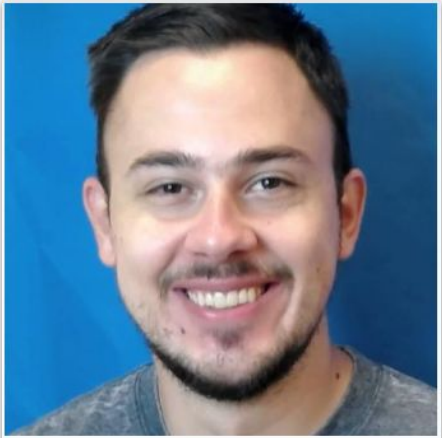
Business English	Prof. Dr. Nadira Aljovic

Prof. Dr. Nadira Aljovic

"A good basis of General English is necessary for effective communication. However, to meet the demands of modern employers, you need to be able to use English to make phone and conference calls, do presentations, take part in meetings, be involved in negotiations, write emails, reports, etc. – in short, to communicate with a professional attitude and confidence, using specific formal vocabulary and sentence structures. Our Business English course focuses on topics and language skills applicable to the workplace, and necessary for accurate communication and professional progress."

DSAI Curriculum: II Semester

II semestar	Academic Staff
Practical Application of Artificial Intelligence	Doc. Dr. Kenan Sehic
Algorithms and Data Structures I	Prof. Dr. Haris Supic
Probability and Statistics for AI	Doc. Dr. Amra Delic Halilovic
Mathematical Logic	Prof. Dr. Lejla Smajlovic
Mathematics for AI II	Prof. Dr. Senada Kalabusic
Financing of Innovation	Prof. Dr. Amila Pilav Velic



Doc. Dr. Kenan Šehić

"I am honored to contribute to this initiative that connects academic learning with practical industry demands in data science and AI. Through my research and collaborations with industry partners, I have witnessed firsthand the vast potential these fields offer for innovation and growth. I am enthusiastic about guiding and teaching students who are poised to lead the way in shaping the future with their unique expertise and creative vision."

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Prof. Dr. Haris Šupić

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Doc. Dr. Amra Delić

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Financing of Innovation	Prof. Dr. Amila Pilav Velic

Prof. Dr. Lejla Smajlović

"Data science and AI have become major tools that empower us to navigate a dynamic world, solve complex problems and create a better future. This program is designed to empower students to master crucial skills necessary to embark on a career in data science and AI and to become industry leaders. It provides extensive professional opportunities in various other sectors, including finance and healthcare. Mathematics and logic is the backbone for reasoning, problem-solving and decision-making. After completing this program, students will have a comprehensive understanding of relevant mathematical concepts that will enhance their ability to shape the intricate landscape of data science and AI."

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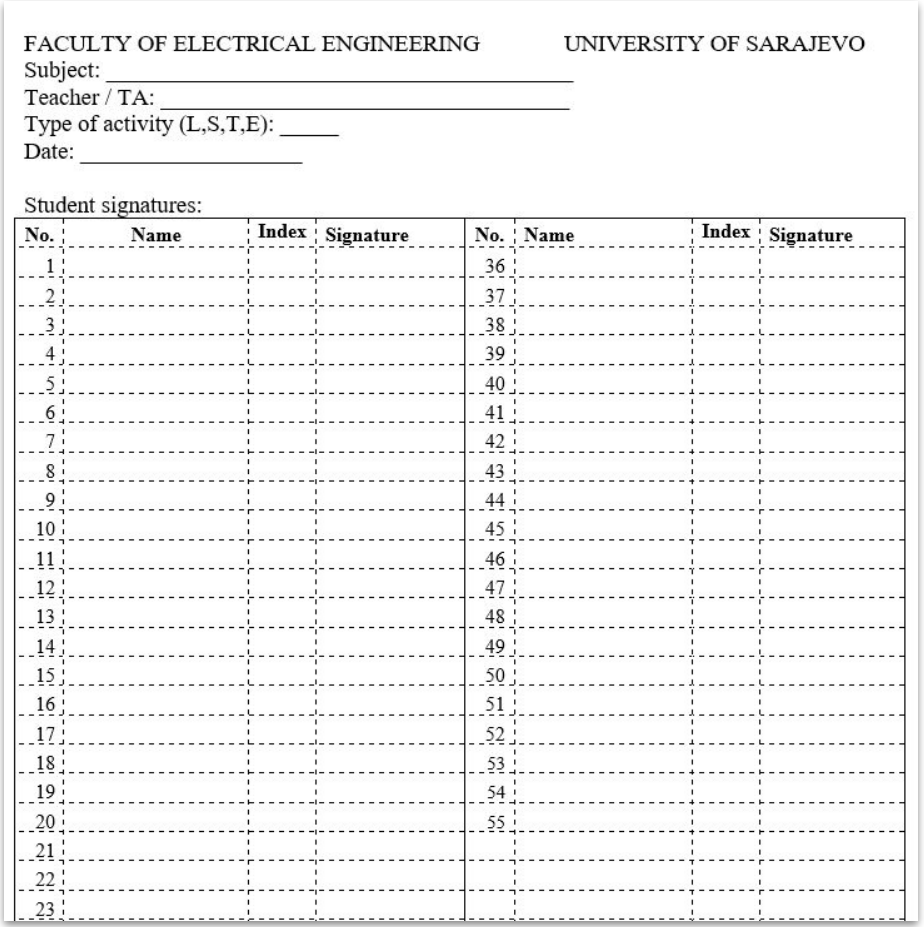
DSAI: Attendance

Whenever you attend lecture, seminar, tutorial, lab exercise, you need to sign the Attendance Sheet!

Professor or TA will provide Attendance Sheet for each lecture/tutorial/exercise.



FACULTY OF ELECTRICAL ENGINEERING UNIVERSITY OF SARAJEVO

Subject: _____

Teacher / TA: _____

Type of activity (L,S,T,E): _____

Date: _____

Student signatures:

No.	Name	Index	Signature	No.	Name	Index	Signature
1				36			
2				37			
3				38			
4				39			
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DSAI: Introductory Glossary

Introductory Glossary: Essential Terms for Surviving Your First Year at University
by Amila Akagić - Monday, 7 October 2024, 10:16 AM

Dear students,

Many of you are enrolling at the University for the first time, so I've compiled an introductory glossary to help you navigate your first year. If you notice any terms missing, please don't hesitate to contact me, as this glossary is a work in progress.

I encourage you to read through it during your first week at the University.

Permalink Edit Delete

Discuss this topic (0 replies so far)

DSAI: One last recommendation

Please work **independently** and **continuously** on studying the material for each subject and prepare as much as possible for the exams.

Welcome to ETF & DSAI!


QUESTIONS?