



**Course Syllabus**  
**According to JORDAN National Qualification**  
**Framework (JNQF)**

**Course Name: Highway and Traffic  
Safety**

**Course Number: 04035261**

### General Course Information:

Course title	Highway and Traffic Safety
Course number	04035261
Credit hours	Three Credit hours (Theory)
Education type	[Face-to-Face]
Prerequisites/corequisites	Engineering Statistics,403208
Academic Program	Civil engineering
Program code	403
Faculty	Engineering
Department	Civil engineering
Level of course	5 <sup>th</sup> Year
Academic year /semester	Second Semester 2021-2022
Awarded qualification	B.Sc
Other department(s) involved in teaching the course	Non
Language of instruction	English
Date of production/revision	2021/2022

### Course Coordinator:

Coordinator's name	Dr. Eng. Hussein Saraireh
Office No	4308
Office Phone extension number	2502
Office Hours	9 hours/ Sunday, Tuesday, Thursday: 13:00-14:30 and Monday, Wednesday: 10.00-11.00
Email	Email: huussein.saraireh@iu.edu.jo

### Other Instructors:

Instructor name	
Office No	
Office Phone extension number	
Office Hours	
Email	

### Course Description (English/Arabic):

English	Introduction to Highway and Traffic Safety, Issues Involved in Transportation Safety, Strategic Highway Safety Plans, Performance measures, Computational Procedures for Safety effectiveness, Evaluation Methods, Crash Patterns, Effectiveness of Safety Design Features, Safety Effects of Pedestrian Facilities, Safety Effects of Traffic Calming Strategies, Safety Impact of Intelligent Transportation System (ITS).
Arabic	أهمية السلامة على الطرق، تصنيف الحوادث المرورية، أسباب الحوادث المرورية، تقارير الحوادث، مخططات التصادم، برامج تطوير السلامة على الطرق، المتطلبات التصميمية لسلامة الطرق، مشروع فصلي.

**Textbook:** Author(s), Title, Publisher, Edition, Year, Book website.

- Nicholas J. Garber, Lester A. Hole, Traffic and Highway Engineering 4th Ed. & 5th Ed. - SI Edition 2010, 2014.
- Roger P. Roess, Elena S. Prassas, William R. McShane, Traffic Engineering 3rd ed. 2004

**References:** Author(s), Title, Publisher, Edition, Year, Book website.

1. Fundamentals of Transportation Engineering, 3rd Ed. By Papacosta
2. Highway Capacity Manual (HCM-2010)
3. A Policy on Geometric Design of Highway and Streets AASHTO, American Association of State Highway and Transportation Officials, Washington D.C., 2004

**Course Educational Objectives (CEOs):**

1.	Understand the Highway and Traffic Safety and Issues Involved in Transportation Safety.
2.	Know the Strategic Highway Safety Plans, Performance measures, Computational Procedures for Safety effectiveness, Evaluation Methods
3.	Analysis the Crash Patterns, Effectiveness of Safety Design Features, Safety Effects of Pedestrian Facilities, Safety Effects of Traffic Calming Strategies, Safety Impact of Intelligent Transportation System (ITS).

**Intended Learning Outcomes (ILO's):**

1.	Subject Intended learning outcomes (ILOs) describe what students are expected to know and be able to do at the end of the course. These outcomes are related to the knowledge, skill and competence that students acquire:	Relationship to CEOs	Contribution to PLOs	Bloom Taxonomy Levels*	Descriptors**
2. A	<b>Knowledge and Understanding:</b>				
3. A1	Demonstrate an understanding of the fundamental knowledge of Highway and Traffic Safety and the principles of Strategic Highway Safety Plans	1,2	1	1	K
4. A2	Demonstrate an understanding of the principles of performance measures in traffic Safety and the principles of traffic safety accident prediction analysis	2	2	2	C
5. A3	Demonstrate an understanding of the highway safety design and operating practices	3	4	3	S
6. B	<b>Intellectual skills:</b>				
7. B1					
8. B2					
9. B3					
10. C	<b>Subject specific skills:</b>				

<b>11. C1</b>	<b>Work effectively in teams to develop solutions to practical in highway and traffic safety problems</b>	<b>3</b>	<b>5</b>	<b>6</b>	<b>S</b>
<b>12. C2</b>					
<b>13. C3</b>					
<b>14. C4</b>					
<b>15. D</b>	<b>Transferable skills:</b>				
<b>16. D1</b>					
<b>17. D2</b>					
<b>18. D3</b>					

**\*Bloom Taxonomy Levels**

Level #	1	2	3	4	5	6
Level Name	Knowledge	Comprehension	Application	Analysis	Evaluation	Synthesis

**\*\* Descriptor (National Qualification Framework Descriptors): K : Knowledge, S: Skill, C: Competency.**

**Program Learning Outcome (PLOs):**

Program Learning Outcomes describe what students are expected to know and be able to do by the time of graduation. These relate to the knowledge, skills, and behaviours that students acquire as they progress through the program. A graduate of the (CE) program will demonstrate:		Descriptors**		
		K	S	C
1.	An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.	✓		
2.	An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.			✓
3.	An ability to communicate effectively with a range of audiences.		✓	
4.	An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.			✓
5.	An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.		✓	
6.	An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.		✓	
7.	An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	✓		✓

**\*\* Descriptors according to the national qualifications framework (K: knowledge, S: skill, C: Competency)**

**Weekly Schedule**

✓ Face to Face

Week	First Hour + Second Hour + Third Hour	Ach. ILOs	Ach. PLOs	Descriptors*
1	Issues Involved in Transportation Safety	1	1	K
2	Issues Involved in Transportation Safety	1	1	K
3	Strategic Highway Safety Plans	1	1	K
4	Strategic Highway Safety Plans	1	1	K
5	Effectiveness of Safety Design Features	1	1	K

6	Effectiveness of Safety Design Features	1	1	K
7	Accidents data collection and records	2,4	2,5	C,S
8	Accidents data collection and records	2,4	2,5	C,S
9	accidents statistics	2,4	2,5	C,S
10	accidents statistics	2,4	2,5	C,S
11	accidents site analysis	3,4	4,5	C,S
12	accidents site analysis	3,4	4,5	C,S
13	development of countermeasures	3,4	4,5	C,S
Final Exam				

\* K: Knowledge, S: Skills, C: Competency

### Teaching Methods and Assignments:

Development of ILOs is promoted through the following teaching and learning methods:

- Interactive videos
- Practice Labs
- Discussion Forums
- Quizzes
- Other Interactive online activities
- Reports

### Course Policies:

A- Attendance policies:

The maximum allowed absences is 15% of the lectures.

B- Absences from exams and handing in assignments on time:

Midterm exam can be retaken based on approval of excuse by the instructor's discretion.

Not handing assignment on time will incur penalties.

C- Academic Health and safety procedures

D- Honesty policy regarding cheating, plagiarism, and misbehaviour:

Cheating, plagiarism, misbehaviour will result in zero grade and further disciplinary actions may be taken.

E- Grading policy:

- All homework is to be posted online through the e-learning system.
- Exams will be marked within 72 hours and the marked exam papers will be handed to the students.
- Online Activities (Course Videos, Practice labs, Discussion Forums, Quizzes) **20%**
- Midterm **30%**
- Final Exam **50%**

F- Available university services that support achievement in the course: **E-Learning Platform, Labs, Library.**

### Required equipment:

- PC / Laptop with webcam and mic
- Internet Connection
- Access to the IU E-Learning Platform at:  
<https://elearn.iu.edu.jo/course/view.php?id=2105>
- E-learning plan
- Satisfaction questionnaires for online and face-to-face learning
- Software for e-learning
- Training

### Assessment Tools implemented in the course:

- ✓ Final Exam
- ✓ Midterm Exam
- ✓ Homework
- ✓ Discussion Forums
- ✓ Periodic reports for learning assessment
- Improvement plans for online or face-to-face teaching
- Others: Quiz

### Responsible Persons and their Signatures:

Course Coordinator	Dr.Eng. Hussein Saraireh	Completed Date	/ / 2022
		Signature	
Received by (Department Head)	Dr. Ibrahim Varooqa	Received Date	/ / 2022
		Signature	