

**[Traffic Safety
and Human
Behavior]
Course Syllabus**

[GENG 104]

Semester [FALL]



Traffic Safety and Human Behavior

Course Description
<p>This course provides an introduction to the fundamental concepts of traffic safety and it demonstrates the main elements. It covers the following areas: principles of traffic safety and road users' behavior. The course investigates road user characteristics and limitations and how these affect traffic safety. The course will equip students with a knowledge of traffic safety and capabilities to analyze problems and help them play a positive role in addressing local traffic safety challenges through Project Based Learning (PBL) approach.</p>
<p>Course Number: GENG 104</p>
<p>Course Title: Traffic Safety and Human Behavior</p>
<p>Number of Credit Hours: 3</p>
<p>Number of Contact Hours: 3</p>
<p>Required or Elective: NIL</p>
<p>Course Prerequisites: NIL</p>
<p>Course Co-requisites: NIL</p>
<p>CCP Package: Core Knowledge and Skills package</p>
<p>Language of Instruction: English and Arabic</p>
<p>Textbook: Instructor's slides and handouts (English and Arabic); Supported by: Carter, D.L., Gelinne, D., Kirley, B., Sundstrom, C., Srinivasan, R., & Palcher-Silliman, J. (2017, November). Road safety fundamentals: Concepts, strategies, and practices that reduce fatalities and injuries on the road (<i>Report FHWA-SA-18-003</i>). Washington, D.C.: Federal Highway Administration Office of Safety.</p>
<p>References: Green, M., 2017, Roadway Human Factors: From Science to Application. ISBN-13: 978-1930056602 - ISBN-10: 1930056605</p>



Course Objectives

The objectives of this course are to:

1. Discuss the importance of traffic safety through explaining its social, economic, and health impacts on society, enabling students to promote traffic safety principals
2. Characterize the multidisciplinary approach, so-called "four E's": Engineering, Education, Enforcement, and Emergency response
3. Analyze the role of the road users' behavior in crash occurrence
4. Examine traffic safety issues and contributing factors
5. Research a proactive approach to develop potential treatments to mitigate safety problems

Student Learning Outcomes (SLOs)

By the end of the course, students will be able to:

SLO-Id CLO-Statement

- SLO 1 Discuss different traffic safety concepts and the role of road users behavior to stress the importance of traffic safety
- SLO 2 Analyze contributing factors for traffic safety problems
- SLO 3 Evaluate safety countermeasures, i.e. campaign, treatments, to reduce traffic incidents
- SLO 4 Identify innovative solutions related to traffic safety in Qatar by conducting a comprehensive project.

Mapping CCP Learning Outcomes with SLOs of Traffic Safety and Human Behavior Course:

Student Learning Outcomes	CCP Learning Outcomes						
	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7
SLO1:			X			X	
SLO2:			X	X			X
SLO3:			X				X
SLO4:			X	X	X		X

Mapping CCP Student Objectives with Traffic Safety and Human Behavior goals.

<p style="text-align: center;">Traffic Safety and Human Behavior</p> <p>CCP Objectives</p>	<p>Discuss the importance of traffic safety</p>	<p>Characterize the multidisciplinary approach</p>	<p>Discuss the role of the road users behavior in crash occurrence</p>	<p>Examine traffic safety issues and contributing factors</p>	<p>Research a proactive approach to develop potential treatments to mitigate safety problems</p>
<p>1. Instill the concept of good citizenship within the commitment to the framework of Arabic and Islamic moral values.</p>	X				
<p>2. Develop basic competence in the principles, theories, and analytical methods used in a broad variety of disciplines.</p>		X	X	X	
<p>3. Equip students with the 21st century skills needed for academic success and lifelong learning.</p>					X
<p>4. Prepare graduates to bring about positive change in their chosen professions and communities.</p>			X		X

QU Educational Excellence Framework

<u>Themes</u>	<u>Kindly provide evidence on in which ways the course addresses the five themes</u>
<u>Learner-centric</u>	<ul style="list-style-type: none"> • Apply PBL approach in which students work in teams on a real case study in the context of traffic safety • The use of multiple teaching methods supports active Learning (e.g., Interactive lectures, Class discussions, Collaborative work, visiting lecturers, and Video-based learning) and activities such as brainstorming, group discussion, and problem-solving (e.g., group projects, quizzes). Use digital technology to engage students and enhance their learning by, e.g., driving in different scenarios in the driving simulator at Qatar Transportation and Traffic Safety Centre at the College of Engineering to improve hazards /risks perception
<u>Entrepreneurial</u>	<ul style="list-style-type: none"> • Students would learn how to develop their entrepreneurial skills-by investigating Qatar's traffic safety problems and providing creative and innovative solutions related to road user behavior and crash prevention. • By teaching leadership, teamwork, and relationship-building skills such as. campaigns and relevant treatments, civic responsibility experience, and education, the student learnings may eventually trigger their entrepreneurial skills • Students engage in conducting a traffic safety project (PBL) where they are evaluated to apply the knowledge from the core content of delivered material in traffic safety. It is anticipated that a multidisciplinary team is formed amongst the students to investigate traffic safety issues in Qatar and propose solutions
<u>Digitally enriched</u>	<ul style="list-style-type: none"> • Encouraging students to use online resources in traffic safety, mainly: road users' behavior, traffic safety issues and contributing factors, traffic safety countermeasures incl. campaigns and relevant treatments, civic responsibility experience, and education, to answer questions and explore concepts during class and teaching search and information evaluation strategies . • Students present a certain design that is related to traffic safety, design a creative guideline, and projects that are related to traffic safety.

Course Content		
Week	Part	Content
1	Part 1: Foundations of Traffic Safety	• Context of traffic safety
2		• Human-vehicle-road environment interaction
3		• Road users
4		• Multidisciplinary approaches - Engineering - Education - Enforcement - Emergency Response
5	How can you conduct a traffic safety study?	• Principles of traffic safety studies • Project report and group presentation
	<i>Discussion session to introduce the Group Project</i>	• Brainstorming session on possible topics
6	Part 2: Human Behavior and Road Safety	• Understanding & changing human behavior
7		• Impact of using technology on traffic safety and human behavior
		<i>Flipped Classroom session</i> • Related to the reflection paper
8	Part 3: Measuring Safety	• Type of traffic safety data
9		• Improving traffic safety data quality
10	Part 4: Solving Safety Problems	• Traffic safety management process
11		• Site-Level & system-level safety management
		<i>Follow up group discussion session on the Group Project</i> • Brainstorming session on measuring traffic safety (e.g., statistics)
12	Part 5: Implementing Road Safety Efforts	• Traffic safety research
13		• Strategic communications
		• Advancing traffic safety
14	<i>Group project presentation session</i>	

Component	Description	Mark
Assignments	<p>The students will work in groups planning their PBL project and prepare short reports or educational posters on traffic safety problems such as road user safety, teen driver safety, distracted driving, etc...</p> <p>Students can also collect crash data (local or International) and conduct simple statistic comparisons and analyses.</p> <p>Examples:</p> <ul style="list-style-type: none"> • Review findings in the context of dangerous driving behavior in Qatar • Benchmarking on traffic safety records in an international context and making a comparison with that of Qatar 	15%
Quizzes	<p>These in-class quizzes include different direct questions about course chapters to evaluate student performance. Three (3) quizzes, each quiz 5% are anticipated</p>	15%
Group Project & Presentation	<p>Students work in small groups to apply concepts and skills addressed during the class. Specifically, students will evaluate their ability to design and deliver a campaign to promote traffic safety or innovative solution (products) for traffic safety.</p> <p>Alternatively, students will:</p> <ul style="list-style-type: none"> - Choose a traffic safety problem of their interest - Collect credible information, statistics, videos - analyze the risk factors and propose the mitigations - Propose a new intervention / project / idea to solve - Write the project report - Present the project findings 	25%
Reflection paper	<p>This exercise aims to promote critical thinking and foster collaboration and discussion amongst students on a</p>	20%

	<p>specific topic related to traffic safety. Specifically, students will be undertaking the following:</p> <p>First, the discussion forum will be established on Blackboard.</p> <p>Following the discussion amongst students, a flipped classroom activity will be conducted by students.</p> <p>Then, a One-page reflection paper will be submitted by each student as a summary for evaluation.</p> <p>.</p>	
Final Exam	An in-class exam that includes different types/ levels of questions about course content to evaluate the student on the core content of delivered material.	25%

Course Ground Rules

Following student's handbook regulations.

1. Class Attendance:
 - a. Attendance will be taken 10 minutes after the beginning of the class. If you come after 10 minutes, you can attend but you will be recorded absent.
 - b. University regulations apply (allowing 25% absence). However, students are responsible for all the material covered in class.
 - c. If you were absent during a quiz or an exam, the corresponding grade will be recorded as zero. No makeup will be given except with a medical excuse.
2. Plagiarism:
 - a. Your submitted assignments, quizzes and exams should reflect your own work.
 - b. Any instance of cheating or copying in assignments will result in a grade of "zero" in the whole assignment.
 - c. Any instance of cheating in an exam will be reported to the Department's Head to consider formal actions.
 - d. Borrowing and sharing of resources during quizzes and exams will always be forbidden. Make sure that you always have your pen, calculator and all the required materials.
3. Cell Phones:
 - a. Before lectures, make sure to put your mobile phone on "Silent" or "OFF".
 - b. Before exams, make sure that mobiles are turned "OFF".
 - c. It will not be allowed to use cell phones as calculators in any quiz or exam.

If you want to meet me (except office hours), please book an appointment at least 1 day in advance

University Code of Conduct

QU expects its students to adopt and abide by the highest standards of conduct in their interaction with professors, peers, staff members and the wider university community. Moreover, QU expects its students to act maturely and responsibly in their relationships with others. Every student is expected to assume the obligations and responsibilities required from them for being members of the QU community.

As such, a student is expected not to engage in behaviors that compromise their integrity, as well as the integrity of QU. Further information regarding the University Code of Conduct may be found on the web at <http://www.qu.edu.qa/students/code-of-conduct>

Support for Students with Special Needs

It is Qatar University policy to provide educational opportunities that ensure fair, appropriate and reasonable accommodation to students who have disabilities that may affect their ability to participate in course activities or meet course requirements. Students with disabilities are encouraged to contact their Instructor to ensure that their individual needs are met. The University through its Special Needs Section will exert all efforts to accommodate for individuals' needs.

Contact Information for Special Needs Section:

Tel-Female: (00974) 4403 3843

Tel-Male: (00974) 4403 3854

Location: Student Activities Building Email: specialneeds@qu.edu.qa