

Faculty of Engineering & Technology

Highway and airport Engineering

Information :

Course Code : SCM 524

Level : Undergraduate

Course Hours : 3.00- Hours

Department : Department of Structural Engineering & Construction Management

Instructor Information :

Title	Name	Office hours
Associate Professor	Mohamed Elsaid Abdel Motaleb Abdel Razek	2
Teaching Assistant	Ahmed Taher Abdelhamed Mohamed Yousef	

Area Of Study :

- Road classification
- Route selection
- Horizontal alignment of roads
- Vertical alignment of roads
- Soil classification for road construction
- Types of pavements
- Design of flexible pavement
- Design of Rigid pavement
- Intersection planning
- Components of civil airports
- Geometric design of runways, taxiways, and aprons

Description :

Introduction to highway and airport planning, Classification of highways, Design controls and criteria, Design of elements in the longitudinal direction, Design of cross sections, Design of At-Grade intersections, Grade separations and interchanges, Types of pavements, Calculation of stresses in flexible and rigid pavements, Types and characteristics of paving materials and mixtures, Equivalent axel loads, Design of flexible and rigid pavement thickness, Introduction to pavement maintenance and repair.

Course outcomes :

a. Knowledge and Understanding: :

1 -	- Define main concepts of road design
2 -	Adequate knowledge of road planning and pavement design
3 -	- Define main concepts of airport engineering

b. Intellectual Skills: :

1 -	Capability to design roads in both urban and rural areas
2 -	Usage of most common pavement design techniques
3 -	Ability to design the road pavements

c. Professional and Practical Skills: :

1 -	Ability to classify soil for road construction purposes
2 -	Ability to handle and practically work with the recent techniques for pavement design
3 -	Ability to evaluate the different alternatives of roads.

d. General and Transferable Skills: :

1 -	The skill and gift of working in team.
2 -	presenting road alternatives, pavement design, airport components

Course Topic And Contents :

Topic	No. of hours	Lecture	Tutorial / Practical
Road classification	3	1	1
Highway capacity and level of services ¹	3	1	1
Horizontal alignment	9	3	2
Vertical alignment	9	3	2
Intersection planning	9	3	1
Soil classification	3	1	1
Evaluation of soil strength	3	1	1
Design of flexible and rigid pavement	3	1	-

Teaching And Learning Methodologies :

Lectures
Tutorials

Course Assessment :

Methods of assessment	Relative weight %	Week No	Assess What
1st mid term	25.00		
2nd mid term	10.00		
final	40.00		
quizes	25.00		

Course Notes :

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Recommended books :

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Periodicals :

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Web Sites :

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