

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 |
|--------------------|-------------------------------------|--------------|
| Lecturer | Emad Eldin Nabil Ali Bayoumi | 15 |
| Lecturer | Emad Eldin Nabil Ali Bayoumi | 15 |
| Assistant Lecturer | Mahmoud Abu Ouf Alashri Abdelrahman | 3 |
| Assistant Lecturer | Reham Milad Kamel Samaan | |
| Teaching Assistant | Mohamed Fathy Salem Mohamed | 2 |
| Teaching Assistant | Mohamed Fathy Salem Mohamed | 2 |

Area Of Study :

Upon successful completion of this course, the student should be able to:

- Understand the basic concepts and main principles
- Calculate the values of the essential terms
- Apply Codes provisions

Regarding highway & airport planning classification of highways geometrical design of highway flexible pavement hard pavement pavement maintenance & repair

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: :

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| 1 - | Describe the main concept of highway & airport planning |
| 2 - | List the main items of classification of highways |

b.Intellectual Skills: :

- | | |
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| 1 - | Solve problems regarding geometrical design of highway |
| 2 - | Design the elements of flexible pavement |
| 3 - | Design the elements of hard pavement |

c.Professional and Practical Skills: :

- | | |
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| 1 - | Draw neat details of geometrical design of highway |
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|--|---|
| 2 - | Apply Code provisions regarding flexible pavement |
| 3 - | Apply Code provisions regarding hard pavement |
| 4 - | Prepare technical reports for pavement maintenance & repair |
| d.General and Transferable Skills : | |
| 1 - | Work under stress |

| Course Topic And Contents : | | | |
|------------------------------------|--------------|---------|----------------------|
| Topic | No. of hours | Lecture | Tutorial / Practical |
| Highway & airport planning | 8 | 6 | 2 |
| Classification of highways | 8 | 6 | 2 |
| Geometrical design of highway | 12 | 9 | 3 |
| Flexible pavement | 12 | 9 | 3 |
| Hard pavement | 12 | 9 | 3 |
| Pavement maintenance & repair | 4 | 3 | 1 |
| Revision | 4 | 3 | 1 |

| Teaching And Learning Methodologies : |
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| Interactive Lec. |
| Discussion |
| Problem Solving |
| Report / Present. |

| Course Assessment : | | | |
|----------------------------|-------------------|---------|-------------|
| Methods of assessment | Relative weight % | Week No | Assess What |
| 1st mid term | 15.00 | | |
| 2nd mid term | 15.00 | | |
| final | 40.00 | | |
| Quizzes / Assig. | 15.00 | | |
| Report / Present. | 15.00 | | |

| Course Notes : |
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| Handout notes on MOODLE |

| Recommended books : |
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| "The Handbook of Highway Engineering", T.F. Fwa, Taylor & Francis, 2006 |

| Periodicals : |
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Web Sites :

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