

## Construction & Building Engineering Courses (CB)

Transportation Engineering Courses Group

### CB 575 – Special Topics in Transportation Engineering

#### COURSE INFORMATION

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Course Title: Special Topics in Transportation Engineering

Code: CB 575

Hours: Lecture – 2 Hrs.                      Tutorial – 2 Hrs.                      Credit –3.

Prerequisite: CB 574

#### GRADING

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Class Performance/Attendance: 10%

Midterm # 1/Assignments – (7<sup>th</sup> Week): 30%

Midterm # 2/Assignments – (12<sup>th</sup> Week): 20%

Final Exam: 40%

#### COURSE DESCRIPTION

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Airport classification & site selection; Wind data analysis; Airport Configuration and main components; Determination of runway basic length & corrections; Aircraft characteristics components of airport system; Overall airport site; Classifications of Airport supporting soil; Design of Airport flexible pavements; Design of Airport Rigid Pavements; Airport lighting; Aircraft refueling, electrical power, navigation marking; Airport safe surfaces; Airport Air-traffic, Control System; Instrument landing System, Railway engineering , railway system , Railway alignment, track elements, Cross section, Platform, length, switching , signaling , Transportation Management System, Transportation Software.

#### TEXT BOOK

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The Planning and Design of Airports by R.Horonejeff Publisher: McGraw-Hill Co.Inc.1994.

#### REFERENCE BOOKS

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Standard Handbook for Civil Engineers by F.S.Merritt Publisher: McGraw Hill book NY, 1983.

Pavement Management for Airports, Roads and Parking Lots by M.Y.Shahin Publisher: Chapman & Hall, New York 1994.

"Egyptian Code for Highways by Ministry of Urban Planning Publisher: 1998.

COURSE AIM

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The course aims at introducing the student to the fundamentals of Airport Railway planning and design and their relation to the field of transportation.

SPECIFIC OUTCOMES OF INSTRUCTION

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- The student should be aware with the procedures and special considerations for Airport railway, Planning & design.
- The student should be able to understand the sequence in the analysis process and the factors affecting the design of the major components of Airport site and railway project.

COURSE OUTLINE

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*Week Number 1-2:* Airport Classification & Site Selection, Wind Analysis & Wind Rose Construction.

*Week Number 3:* Determination of runway basic length & corrections.

*Week Number 4-5:* Aircraft Classification & Characteristics, Components of Airport system & Services.

*Week Number 6:* Overall Airport Site I, runway, taxiway, terminal Bldg.

*Week Number 7-8:* Overall Airport Site II, Apron gate, Parking lots, strips, Runways and holding aprons configurations.

*Week Number 9:* Classification of Airport Soils.

*Week Number 10:* Design of Airport Flexible Pavements.

*Week Number 11:* Railway Engineering, Definition, components of railway systems.

*Week Number 12:* Railway alignment, track elements, cross section, basic of design.

*Week Number 13:* Railway platforms, length, switching, signaling.

*Week Number 14:* TMS, Transportation Management System, components, flowchart of analysis.

*Week Number 15:* Review of Commercial Transportation, Highway, Airport, Railway Software.

*Week Number 16:* Final Exam.

APPENDIX A-183

COURSE COORDINATOR AND DEMAND

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*Course Coordinator:* Dr. Akram Soltan Kotb.

*Course Demand:* *Elective*