

**CEGR 4090/5090, ARCH 4050/6050**  
**Airport Terminal Design**  
**Course Syllabus**

**Class Hours and Meeting Room**

Wednesdays 6:00PM – 8:45PM                      EPIC 3336

**Instructor**

Jack Christine, Chief Infrastructure Officer, Charlotte Douglas International Airport

Office Hours: By Appointment

Telephone: (704) 507-2978

E-mail:            jlchrist@uncc.edu

**Website**

TBD

**Reference Text**

National Academies of Sciences, Engineering, and Medicine. 2010. *Airport Passenger Terminal Planning and Design, Volume 1: Guidebook*. Washington, DC: The National Academies Press. ISBN 978-0-309-11820-0

**Course Description**

The principles of airport terminal design are studied. This course covers essential elements of current airport terminal design trends, including the organization and layout of terminal facilities, terminal facility requirements, structural, mechanical and technology system considerations, and sustainability initiatives. The course also focuses on terminal landside planning, such as roadway systems, intermodal connections, and parking facility development. The course also explores the financing options related to capital development of airports, including grants, passenger facility charges, and bonds.

**Course Objectives**

The objective of airport terminal design course is to provide the student with an understanding of the facility requirements and operation of an airport terminal including a study of supporting elements such as aircraft operating areas, design of both the airside and landside facilities, sustainability initiatives and terminal development considerations. Planning concepts will focus on landside access, information technology systems, environmental, economic, and security impacts as they relate to current terminal design trends.

Upon course completion, students will be able to:

1. Develop an understanding of the issues to consider when undertaking the planning and design of terminal facilities in an ever-evolving commercial aviation market.

2. Understand terminal facility requirements for an air carrier airport, including ticketing, baggage claim, security checkpoints, hold rooms, concessions, restrooms, public circulation areas, airline support areas, etc.
3. Analyze the need for passenger amenities in the design of terminals, such as public art, mother's rooms, yoga rooms, sleeping pods, and charging stations.
4. Understand and identify the major systems needed for airport terminals, including mechanical, baggage, camera, and information technology systems.
5. Analyze landside planning and design concepts, airport terminal concepts, and apply airport design parameters in the placement and sizing a terminal for optimum passenger flow, aircraft compatibility; and changes in aircraft fleet mix. Examine the impact of airport security regulations on current and future terminal design concepts.
6. Identify the factors of landside access and egress including parking, rental car, and intermodal transportation systems to achieve an orderly flow of traffic at the facility. Planning issues related to airport ground access improvements will be examined.
7. Evaluate the impact environmental issues have on airports and how the federal environmental program assists airports with the implementation of the National Environmental Policy Act (NEPA) and other Federal environmental laws and regulations.
8. Identify the different types of capital funding available for airports. Discuss the need for benefit/cost analysis for capital projects. Identify financial metrics used by managers and investors to determine debt risk and financial health of the facility.

### **Grading**

Assignments	15%	
Exams	35%	
Term Project	40%	(Written report and in-class oral presentation)
Quizzes, In-class Participation	<u>10%</u>	
	100%	

### **Class Attendance**

Students are expected to attend all class meetings for the course. Any missed attendance should receive prior authorization from the instructor except under extenuating circumstances. It is the student's responsibility to obtain information pertaining to class discussions, announcements made, lecture notes or handouts distributed during any missed session(s) - please make arrangements with your classmates for this. Students with unauthorized absences from class meetings risk having their final grade for the course dropped by 1 step for every increment of 3 unauthorized absences from class meetings (e.g., A to B for 1-3 unauthorized absences, or A to C for 4-6 unauthorized absences etc.)

Please turn off or mute your phones when in class. If you are expecting an EXTREMELY URGENT call, please have the courtesy to discuss it with the instructor prior to the start of the class session and obtain the instructor's permission to leave your phone turned on for the duration of that class session.

At the end of the class period and prior to leaving the class room, do clean up and dispose of any litter you create.

### **Submission of Written Work**

Please document all of your work (assignments, reports, etc.) as completely as possible. Your writing should be as professional in quality as possible. Each question (even if it is a "problem") must be accompanied by at least one sentence summarizing your findings. All pages of an assignment or submission must be stapled together, be in a legible and well-organized format.

*Submissions must also include the following on the first page:*

*Your name*

*Assignment number*

*Date of submission*

It is better for you to submit whatever work you have completed at the time that the work is due and then turn in work that you complete after this time as a late submission, rather than turning all the work as a late submission.

### **Honor Code**

All students are expected to follow the honor code - submit only your original work! Students are expected to work individually on their assignments, unless otherwise instructed by the instructor in the assignment description. Students may discuss the assignments (interpretation of the questions, procedures to be used, etc.) in groups. Students may use such discussions to better understand the question or alternative methods of addressing the problem. However, the final submission must be the result of the student's individual effort. Please be sure to provide proper credit (citations) where appropriate. *Penalties for violating standards of academic integrity could be severe and are stated in the "UNCC Code of Student Academic Integrity".*

### **Late Submission Policy**

The assignments will be due at the start of the lecture period on the dates specified when they are handed out. In general, you will have at least 7 days to work on each assignment. Assignments submitted late will be accepted at the discretion of the instructor and would carry penalties (a minimum penalty of 20 percent, penalty increases with the lateness of your submission). Late submissions will not be accepted after solutions have been posted or discussed in class.

## **Other UNCC Policies**

### *Disability*

If you have a disability that qualifies you for academic accommodations, please provide a letter of accommodation from the Office of Disability Services at the beginning of the semester. The Office of Disability Services is located in Fretwell Building, Room # 230. The phone # is 704-687-4355 (Voice/TTY).

### *Religious Holidays*

Any student missing class or lab work because of observance of religious holidays shall be given an opportunity during the semester to make up missed work. Please notify your instructor of anticipated absences by January 30, 2007 to be assured of this opportunity.

### *Absences due to official UNCC activity*

Students who represent UNCC at any official extracurricular activity shall have the opportunity to make up assignments, but the student must provide official written notification to the instructor no less than one week prior to the missed class(es).

## Course Outline

1. Introduction & History
2. Terminal Planning and Design Process
3. Terminal Site Planning (Airfield, Landside, and Utilities)
4. Airfield Planning Considerations (Aprons, Gates, and Terminal Support Systems)
5. Terminal Landside Design & Operation (Parking, Roadways, and Mass Transit)
6. Terminal Design Considerations
7. Terminal Concept Development
8. Terminal Facility Requirements
9. Project Completion & Commissioning
10. Environmental Compliance
11. Airport Financing

*The instructor reserves the right to modify or make changes to any of the above. Such changes will be notified in advanced to the students.*