

APTI 423 - Air Pollution Dispersion Models – Applications (AERMOD)
July 24-26, 2018
Wilmington, DE
DRAFT Agenda

Course Director and Instructor:

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Time	Subject	Chapter
<u>July 16, 2018</u>		
8:00-8:15 AM	Welcome/Orientation	Intro
8:15-8:30	Course Overview	
8:30-9:15	Pre-test & review	
9:15-9:45	Class Exercise – model example applications, demo problems	
9:45-10:45	Regulatory Background of Air Dispersion Models	Chapter 1
	<ul style="list-style-type: none"> • Clean Air Act & Amendments /<i>Guideline on Air Quality Models (2017)</i> • State Guidance / Air Permitting / Air Toxic Reviews/Risk Assessment • Model Review and Roadblocks, Overview of PSD Modeling 	
10:45-11:00	Break	
11:00-11:50	Overview of Modeling Components, Methods	Chapter 2
11:50-12:00	Emissions & Parameter Characterization / Class Exercise	
12:00-12:45 PM	Lunch (on your own)	
12:45-1:30	Source Types – Point, Area, Line, Volume; Repeat Source Characterization Class Exercise	Chapter 3
1:30-2:30	Meteorology in Modeling – Scales of Motion – Air Pollution Meteorology - Transport and Dispersion	Chapter 4
2:30-3:00	Meteorological Measurements – instruments, wind roses – Class Exercise wind rose	Chapter 5
3:00-3:15	Break	
3:15-3:45	Introduction to Planetary Boundary Layer Meteorology	Chapter 6
3:45-5:00	Overview of the AERMOD Model System	
	<ul style="list-style-type: none"> • AERMOD (v16216r), AERMET, AERSURFACE, AERMAP • Concepts and model • Daytime & nighttime boundary layers 	
5:00	Adjourn	
<u>July 17, 2018</u>		
8:00-9:45 AM	Meteorological Data Processing	Chapter 7
	<ul style="list-style-type: none"> • AERSURFACE, AERMINUTE, AERMET, MMIF • Processing data using AERSURFACE -Class Exercise • AERMET • AERMET Processing - Class Exercise 	
9:45-10:30	Introduction to Models	Chapter 8
	<ul style="list-style-type: none"> • Model components / Gaussian Theory / • Simplified models/Turner's Workbook 	
10:30-11:15	Handout & Model Class Exercise with AERMET & Break	

11:15-11:45	Plume Rise	
11:45-12:30	Lunch (on your own)	
12:30-1:15	Building downwash/ Good Engineering Practice Stack Height	Chapter 9
	<ul style="list-style-type: none"> • Calculations & Class Exercise • Introduction to Building Profile Implementation Program – BPIP and PRIME 	
1:15-1:45	Screening Models Overview – AERSCREEN, air toxics, visibility	Chapter 10
1:45-2:30	AERSCREEN Hands-on Examples , DOS and GUI	
	<ul style="list-style-type: none"> • Student exercises using AERSCREEN (and break as needed) 	
2:30-3:30	Introduction to Complex Terrain Modeling	Chapter 11
	<ul style="list-style-type: none"> • Visual Characterization, Modeling Adaptations • Reading USGS maps • Digital elevation data – example downloads from website 	
3:30-4:15	Overview of AERMAP	
	<ul style="list-style-type: none"> • Running AERMAP & AERMAP Class Exercise 	
4:15-5:00	Introduction to AERMOD Model	Chapter 12
	<ul style="list-style-type: none"> • Screening vs. refined models • Models Used in Permitting <ul style="list-style-type: none"> - AERMOD – use by air agencies as well as DOTs for mobile sources - CAMx & CMAQ – regional modeling - Air toxics models – SLAB, DEGADIS - CALPUFF – now an alternative model in GAQM 	
5:00	Adjourn	

July 18, 2018

8:00-9:15	AERMOD Model File Structure Review	Chapter 12
	<ul style="list-style-type: none"> • Review the executable and input/output files • Execute the test files in DOS and review 	
9:15-10:15	AERMOD Model DOS Class Exercise	
	<ul style="list-style-type: none"> • Review inputs & make changes • Review command sequence and batch file • Run model and review outputs and post-files 	
10:15-10:30	Break	
10:30-12:00	Overview of AERMOD Graphical User Interfaces (GUIs)	Chapter 13
	<ul style="list-style-type: none"> • Breeze GUI for AERMOD – Trinity • Class Exercise 	
12:00-12:45 PM	Lunch	
12:45-1:30	Using the GUI; importing existing AERMOD file into GUI	
	<ul style="list-style-type: none"> • Using AERMOD, AERMAP, and AERMET together 	
1:30-2:00	PSD Modeling Review	Chapter 14
2:00-3:45	AERMOD Class Exercises (break as needed)	
3:45-5:00	Closing discussion, OMB evaluation, post-test and adjourn	
