ERE445/645: HYDROLOGIC MODELING SYLLABUS

PROFESSOR:	Chuck Kroll	424 Baker Lab	cnkroll@esf.edu
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OFFICE HOURS:	To be announced		
MAILBOX:	Outside Baker 402		
LECTURES:	Tuesdays and Thursdays, 9:30 – 10:50, Baker 437		
COURSE PACKET/ TEXT:	Course packet (for sale at SUNY ESF Copy Center)		
	There is no text required. You will be provided numerous handouts and reading, but to supplement this some suggestion are:		
	 Maidment's <i>Handbook of Hydrology</i>, 1993, McGraw-Hill An excellent reference book on hydrology and hydrologic processes. A general book on hydrology Any hydrology book would be useful. A general book on probability and statistics The <i>Handbook of Hydrology</i> provides excellent summaries, but a good probability and statistics text is useful. 		
PREREQUISITES:	Some Computer F but it's nice to First Year Calculu At least one Proba required) A Good Attitude (Programming Skills (you can start from scratch, to have some background) lus (not totally necessary, but useful) bability and Statistics Course (absolutely e (preferred)	
GRADING:	80% Assigned Pr 20% Final Exam	oblems, Projects and P	resentations

COURSE OBJECTIVES:

To develop and improve your computer programming and data manipulation skills

To gain experience in the development and programming of stochastic and deterministic hydrologic models

To introduce you to commonly employed rainfall-runoff models and modeling techniques, and to investigate the performance of some of these models

To critically evaluate some hydrologic publications, models, and modeling results

To provide an introduction to physics based and empirical models for hydrologic phenomenon, such as:

Precipitation Evapotranspiration Runoff Mechanisms Infiltration Groundwater Discharge Streamflow

To introduce you to various literature sources that may aid you in future modeling efforts

LEARNING OUTCOMES:

By the end of this course, students will have reinforced their ability to use the techniques, skills, and modern engineering/science tools necessary for engineering/science practice

PROBLEM SETS:

There will be a number of assigned programming/modeling problems throughout the semester

Most problems will require the development of a mathematical model, construction of an appropriate computer program, and use of the program to solve the problem

Your code must be well documented, with all variables clearly defined at the beginning of the program!

You may freely discuss methods, programs, and results with anyone. However, you must complete your own analyses, programming, and write-ups. This write-up should be professional (i.e. clear and concise), but does not need to be typed.