Instructor: Professor S. Yavuzkurt
327 Reber Building
Office hours: M F 10:15-11:30
TEL: 865-3340 E-mail: sqy@psu.edu

Recommended Text: Class Notes will be put up on ANGEL

Convective Heat and Mass Transfer
Kays and Crawford, Any Edition

Many other references that will be given in class

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Some of Prof. Yavuzkurt’s Studies in Convective Heat Transfer (as much as time permits)

Gas Turbine Blade Film Cooling
Gas Turbine Heat Transfer under High Free Stream Turbulence
Gas Turbine Conjugate Heat Transfer
Grading

HW 10%
Homework will be put up on ANGEL and collected in class on the due date specified. No late homework will be accepted. Homework will be grades as: Good (Substantial amount of work 10 points), Satisfactory (Acceptable amount of work 7 points), Poor (Very little work 5 points) Not handed in on time (0 points). Solutions will be available after homework is collected. It is up to the students to compare their solutions with the ones supplied by the instructor.

Exam #1-In class (50 Min), open book  March 5, Wednesday  25%
Exam #2-In class (50 Min.), open book  April 9, Wednesday  25%
Term Paper  Due April 21 Monday  40%
(e mail pdf copy to the instructor)

Topics for term papers will be chosen by discussions with me after a literature survey. It will involve a solution of a turbulent flow convective heat transfer problem by use of computer codes FLUENT or OpenFOAM which are available in graduate computing lab and at Penn State Computer Center. Any other CFD code can be used or you can write your own code. There will be no teaching of the codes in class. Students are expected to learn these from tutorials. You might benefit from tutorials on Prof. Cimbala’s web page http://www.mne.psu.edu/cimbala/Learning/learning.htm. If you have a research topic you are already working on you can use a topic related to your research. You should get an account from Matthew D. Lindenberg (201 Reber Building, 865-6232, MLindenberg@mne.psu.edu). Topics should be chosen by Feb 1(Earlier the better).

Papers will be presented in class by each student and online by distance students. About 10 minutes will be allowed for each presentation depending on the number of students. Presentations will take place 4/25-5/2, 2014

Term Paper grade will consist of:

Report  60% (90% technical part, 10% clear writing, language usage etc.)
Oral Presentation  40% (80% technical part, 20% presentation)

Reports should be written with a word processor (no handwriting, including equations and figures). Presentations could use transparencies or power point or similar.

ATTENDANCE: Students are strongly encouraged to attend class and interact with the professor. This is part of the learning. Although I am planning to put up the lectures (both notes and videos) on ANGEL your attendance and discussion in class makes the course much better. If I see that the attendance is dropping because the class notes and videos being available on line, I might stop putting them up and/or start taking attendance and consider attendance when I give final grades. Therefore, please come to the class unless you have an acceptable excuse.
STATEMENT ON ACADEMIC INTEGRITY: Academic honesty and integrity is of utmost importance. You should refer to the College of Engineering's Academic Integrity website at http://www.engr.psu.edu/CurrentStudents/acadinteg.aspx which explains what behaviors are in violation of academic integrity, and the review process for such violations. Specifically for this course:

- **First offense:** Zero score for the item in question.
- **Second offense:** Failure of the course.

**CHEATING:** Using crib sheet; pre-programming a calculator; using notes or books during a closed book exam etc.

**COPYING ON TEST:** Looking at another unsuspecting student’s exam and copying; copying in a complicit manner with another student; exchanging color-coded exams for the purpose of copying; passing answers via notes; discussing answers in exam, etc.

**PLAGIARISM:** The fabrication of information and citations; submitting others work from professional journals, books, articles and papers; submission of other students papers or lab results or project reports and representing the work as one’s own; fabricating in part or total, submissions and citing them falsely, etc.

**ACTS OF AIDING OR ABEADING:** Facilitating acts by others; unauthorized collaboration of work; permitting another to copy from exam; writing a paper for another; inappropriately collaborating on home assignment or exam without permission or when prohibited, etc.

**UNAUTHORIZED POSSESSION:** Of examinations, through purchase or supply; stealing exams; failing to return exams on file; selling exams; photocopying exams; buying exams; any possession of an exam without the custodian’s permission, etc.

**SUBMITTING PREVIOUS WORK:** Submitting a paper, case study, lab report or any assignment that had been submitted for credit in a prior class without the knowledge and permission of the instructor.

**TAMPERING WITH WORK:** Changing own or another students work product such as lab results, papers, or test answers; tampering with work either as a prank or in order to sabotage another work, etc.

**GHOSTING:** Taking a quiz, an exam, performing a laboratory exercise or similar evaluation in place of another; having another take a quiz, an exam, or perform an exercise or similar evaluation in place of the student, etc.

**ALTERING EXAMS:** When instructor returns graded exams for in class review and subsequently collects them, student changes incorrect answers and seeks favorable grade adjustment asserting that instructor made mistake in grading; other forms may include changing the letter or and/numerical grade on test; obtaining test in discretely, etc.

**COMPUTER THEFT PROGRAM:** Electronic theft of computer programs, data, or text belonging to another etc.
For Students with Disabilities

“Penn State welcomes students with disabilities into the University's educational programs. If you have a disability-related need for reasonable academic adjustments in this course, contact the Office for Disability Services (ODS) at 814-863-1807 (V/TTY). For further information regarding ODS, please visit the Office for Disability Services Web site at http://equity.psu.edu/ods/.

In order to receive consideration for course accommodations, you must contact ODS and provide documentation (see the documentation guidelines at http://equity.psu.edu/ods/guidelines/documentation-guidelines). If the documentation supports the need for academic adjustments, ODS will provide a letter identifying appropriate academic adjustments. Please share this letter and discuss the adjustments with your instructor as early in the course as possible. You must contact ODS and request academic adjustment letters at the beginning of each semester.”