

# ME 109: Heat Transfer

## Course Information

### Fall 2016

- Lecture** MWF 10:10 am - 11:00 am  
105 North Gate Hall
- Instructor** Prof. Chris Dames  
cdames@berkeley.edu  
6185 Etcheverry Hall (sometimes 6107 EH)  
Office Hours: Fridays, ~11:30 am - 12:30 pm, Room 6185.
- Graduate Student Staff** Wyatt Hodges (GSI: Both discussions)      Chuck Paeng (Reader)  
wlhodes@berkeley.edu      chuck.paeng@berkeley.edu  
Office Hours:      Office Hours:  
Tuesdays, 11:00 am - 12:30 pm, 136 Hesse.      Mondays, 12:00noon - 1:30 pm, 136 Hesse.
- Communications** Website: <https://bcourses.berkeley.edu/>  
Emails to course staff: Begin subject line with "ME109: ..."
- Description** ME 109. Heat Transfer. (3 units). 3 hours lecture + 1 hour discussion  
Prerequisite(s): ME40 (Thermodynamics) and ME106 (Fluid Mechanics)
- This course covers transport processes of mass, momentum, and energy from a macroscopic view with emphasis both on understanding why matter behaves as it does and on developing practical problem solving skills. The course is divided into four parts: introduction, conduction, convection, and radiation.
- Required Text** *Fundamentals of Heat and Mass Transfer*, 7th Edition (2011)  
Bergman, Lavine, Incropera, & DeWitt ("BLID-7<sup>th</sup>"), ISBN 9780470501979, Wiley.
- Other Editions* may be acceptable (e.g., IDBL-6<sup>th</sup>), but it is your responsibility to determine the correct homework problems and readings if they do not match up.
- Supplemental Texts** Other introductory texts on heat transfer can be useful for gaining additional perspective. Recommended examples include:
- A Heat Transfer Textbook*, J. H. Lienhard IV and J. H. Lienhard V, available free online at <http://web.mit.edu/lienhard/www/ahtt.html>.
- Heat and Mass Transfer*, A. F. Mills (Irwin). Comparable style to BLID.
- Heat Transfer*, Bejan (Wiley, 1993). A bit more theoretical.
- Heat Transfer*, Nellis & Klein (Cambridge, 2009). Slightly more advanced than the above texts. E-version available on Oskicat.
- Programming** You will occasionally write simple programs using software of your choice, such as Matlab, Python, Fortran, etc.

<b>Topics &amp; Schedule</b>	See separate handout.						
<b>Evaluation</b>	<table> <tr> <td>Homework, every 1-2 weeks.</td> <td>30%</td> </tr> <tr> <td>Midterms (<i>tentatively Oct. 3 and Nov. 14.</i>)</td> <td>20% each</td> </tr> <tr> <td>Final (<i>Mon. Dec. 12, 8:00 am - 11:00 am</i>). Cumulative.</td> <td>30%</td> </tr> </table>	Homework, every 1-2 weeks.	30%	Midterms ( <i>tentatively Oct. 3 and Nov. 14.</i> )	20% each	Final ( <i>Mon. Dec. 12, 8:00 am - 11:00 am</i> ). Cumulative.	30%
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<b>Attendance</b>	Attendance at lectures and discussions is expected, but not required.						
<b>Homework</b>	We usually will only grade an unannounced <i>subset</i> of the problems each week. Solutions for all problems will be posted to the course website. Your one lowest HW score will be dropped at the end of the semester.						
<b>Exams</b>	<p>Exams will be closed book/notes/computers/phones. Exceptions:</p> <p>MT1: Allowed 1 sheet of your own notes (8.5" x 11", double-sided).</p> <p>MT2: Allowed 2 sheets of your own notes (8.5" x 11", double-sided).</p> <p>Final: Allowed 3 sheets of your own notes (8.5" x 11", double-sided).</p>						
<b>Regrades</b>	Any serious concerns about grading should be addressed to the instructor (not the GSI or Reader) <i>within 7 days</i> of receiving the graded homework or exam back. Include a <i>brief, written explanation</i> of your concern. Re-graded scores may go up, down, or stay the same. I reserve the right to re-grade the other problems on the homework or exam as well.						
<b>Absences, Late Work, and Make-ups</b>	<p><b>Lectures:</b> Obtain notes from a classmate.</p> <p><b>Homework:</b> No late homework accepted.</p> <p><b>Exams:</b> Missing an exam will result in a zero grade for that exam unless alternative arrangements are made with the instructor <i>prior</i> to the exam. (Exceptions may be made for severe medical or family emergencies.) When granted, makeup exams may be oral or written.</p>						
<b>Other Expectations</b>	<ul style="list-style-type: none"> <li>• Questions are encouraged!</li> <li>• Turn off cell phones.</li> <li>• Treat your colleagues, instructor, GSI, and Reader with respect.</li> <li>• No food or drinks. (Exception: water.)</li> </ul>						
<b>Collaboration vs. Academic Misconduct</b>	<p>Collaboration and discussion on the homework is encouraged in this class, but assignments turned in for a grade must be a student's own work. Consulting with your colleagues is fine, but <i>copying from somebody else's homework solution is considered academic misconduct</i>. (I strongly recommend that you <i>first</i> attempt every homework problem on your own, and only <i>then</i> meet with your colleagues to check and improve your work. The best learning usually comes after getting stuck on your own.)</p> <p>“Academic misconduct is any action or attempted action that may result in creating an unfair academic advantage for oneself or an unfair academic advantage or disadvantage for any other member or members of the academic community.” (Definition from UC Berkeley Center for Student Conduct). <i>Academic misconduct will be referred to the Student Conduct Office.</i></p>						