

# Heat Transfer Scores

**2017**

[https://docs.google.com/spreadsheets/d/ ... sp=sharing](https://docs.google.com/spreadsheets/d/...sp=sharing)

**2018**

[https://docs.google.com/spreadsheets/d/ ... sp=sharing](https://docs.google.com/spreadsheets/d/...sp=sharing)

**2019**

2019 Heat Transfer Scores : Sheet1									
Rank	Student ID	Final Grade	Bonus Assign 0	Bonus Assign. 1	Bonus Assign. 2	Bonus Assign. 3	Bonus Assign. 4	Bonus Design 1	Penalty Attendan 03/05 - 0
#1	201427135	A+	3	2	2.5	0	1.5	3	
#2	201527105	A+	3	2.5	1.5	1	2.5	3	
#3	201428239	A+	3	3	2.5	1	3	3	
#4	201900067	A+	3	2	2.5	1	3	3	
#5	201527136	A+	3	3	3	1	3	3	
#6	201527117	A+	3	2.5	3	0	2.5	3	
#7	201527130	A+	3	2	3	2	3	3	
#8	201427144	A+	3	3	3	1.5	3	1.5	
#9	201527150	A0	3	3	3	0	3	2.5	
#10	201527116	A0	3	2	3	0.5	2.5	3	
#11	201527143	A0	3	3	3	0.5	2.5	3	
#12	201527124	A0	3	2	3	0.5	3	0.5	
#13	201527145	A0	3	2	3	1.5	2.5	3	
#14	201327138	A0	3	1.5	3	0	2.5	3	

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Assignment 0 has been corrected. You were given 1.5 points bonus for creating an account on my website and another 1.5 points for enabling email notifications on the Heat Transfer forum.

Quiz #1 is corrected. I took away 0.5 point if you didn't clearly indicate your answer, another 0.5 point if you didn't iterate properly, 0.5 point if you didn't list that the room volume must be much larger than the volume of the plate, and another 0.5 point if you didn't indicate 1D H-T in the assumptions (or isothermal plate).

Quiz #2 is corrected. I took away 0.5 point if you didn't indicate constant  $k$  or 1D heat transfer along  $x$  in the assumptions. I took away 1-3 points for serious

problems with the logic (not getting  $c_1$ ,  $c_2$ , and  $c_3$  correct).

Quiz #3 has been corrected. I took away points if you didn't indicate clearly where the maximum temperature is located (must be indicated graphically or with  $r = .$ ). I gave full points if your logic is correct for part (b) even if you made some calculation mistake or didn't finish the calculation. If you got less than 1.5 bonus for this problem, you need to put some more work and get the right answer — there's a chance this problem may be asked in the midterm. **If your midterm bonus so far is less than 7, you are not working enough to obtain a B grade: Please make an adjustment or consider withdrawing and taking the course again next year.**

Quiz #4 has been corrected. I took away 0.5 points for not indicating your answer clearly or for not mentioning in the assumptions that  $h$  is uniform on all surfaces or for not indicating properly how the Heisler charts were used. I took away 1 point for not getting the Biot and Fourier number correctly and up to 2 points for something fundamentally wrong with the logic.

Quiz for D1 has been corrected. I gave 1.5 points for getting the correct answer to Q5a and 1.5 points for Q5b. I also inputted the penalties for missing or being late to classes.

Quiz for A5 has been corrected. I took away 0.5 point for not indicating your units within at least one equation: you need to write the number followed by units or use variables. I took away 0.5 point for not indicating your answers clearly. I took away 1-1.5 points if you derived an equation relating the heat transfer at the surface to the viscous dissipation from the energy equation: although this gives the right answer, you're missing the point of finding the heat transfer directly from the temperature distribution (much faster to do). I took away another 0.5-1 point if you didn't derive the velocity distribution from the momentum equation. Many of you did poorly in this quiz: **please redo all 3 questions of A5 for next week and make sure you understand these problems: this is critical for success in the second half of this course.**

Quiz for A6 has been corrected. I took away 1 point if you didn't indicate that the boundary can be either laminar or a laminar-turbulent mix. I took away another 0.5 point or more if your proof that the boundary layer is laminar was not convincing.

Quiz for A7 has been corrected. I took away 1 point if you didn't use the correct Nusselt number correlation. You can't use here the correlations  $Nu_L$  because those give an average  $h$  over the entire surface of the wall. What you have to find here is the  $h$  at a certain location on the vertical plane. I took away another point if your heat balance equation was wrong, and 0.5 point if you didn't iterate to find the answer as you should.

Quiz for D2 has been corrected. I took away 0.5 point if you didn't indicate in

your assumptions that the gas has negligible kinetic energy change or no viscous dissipation. I took away 0.5 point if you didn't put units after  $h = \dots$  I took away up to 3 points if you didn't do the second part of the question (finding the mass flow rate of kerosene), and 0.5 point if you obtained a negative mass flow of kerosene. The mass flow can only be in one direction — a negative sign is meaningless here.

Quiz for A8 has been corrected. I took away 0.5 point if you didn't mention negligible V.D. in your assumptions. I took away 0.5 point if you DID erroneously assume negligible kinetic energy change (this is not a necessary assumption if the fluid has constant density). I took away 2-3 points for problems with the logic in part (b), related with not using the LMTD or not finding the Nusselt number properly.

I included the penalties for being late or missing classes. Please check that there is no mistake and that your final bonus is correct. If there is a problem, let me know.

The final exams have been corrected and the grades awarded.