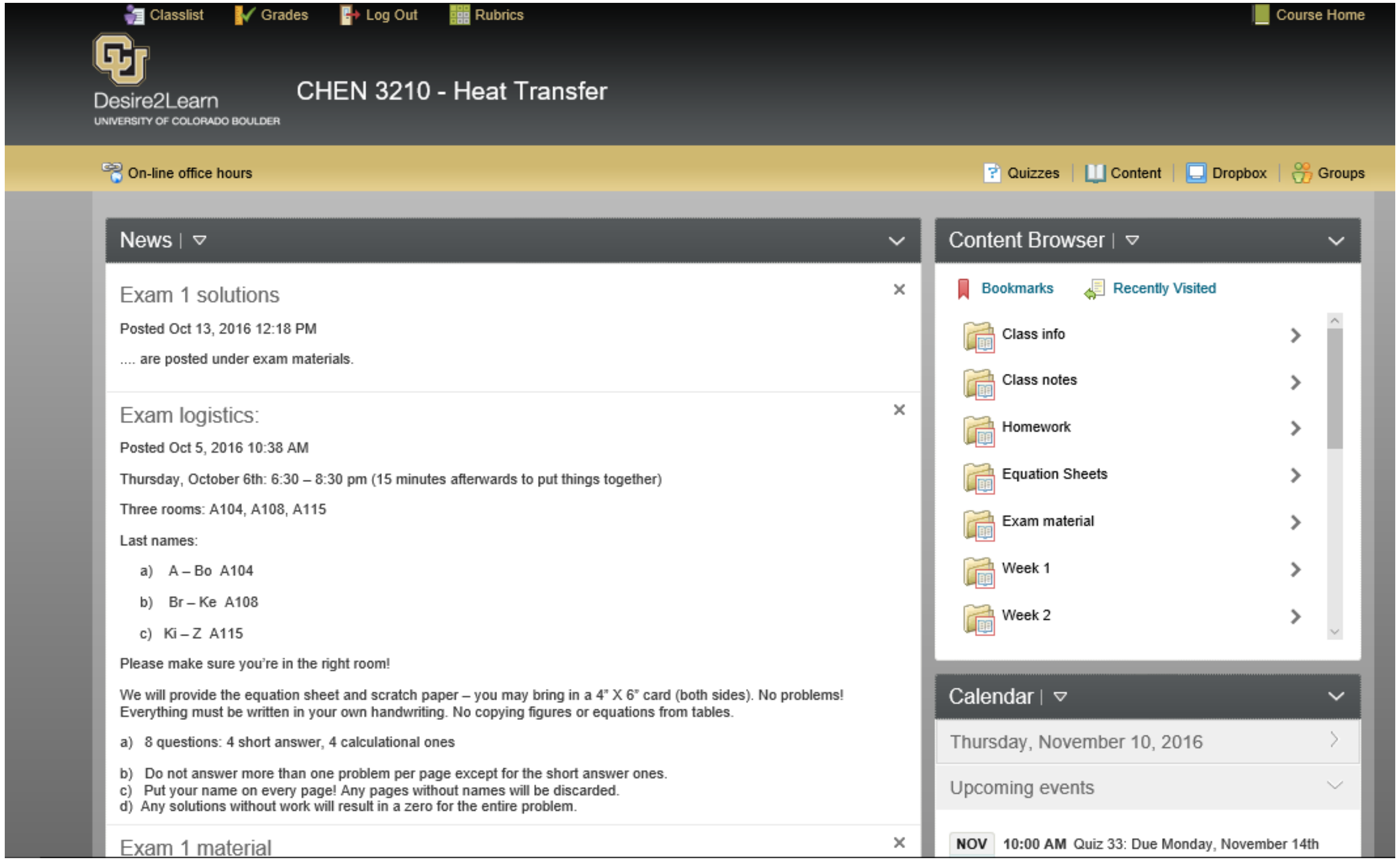
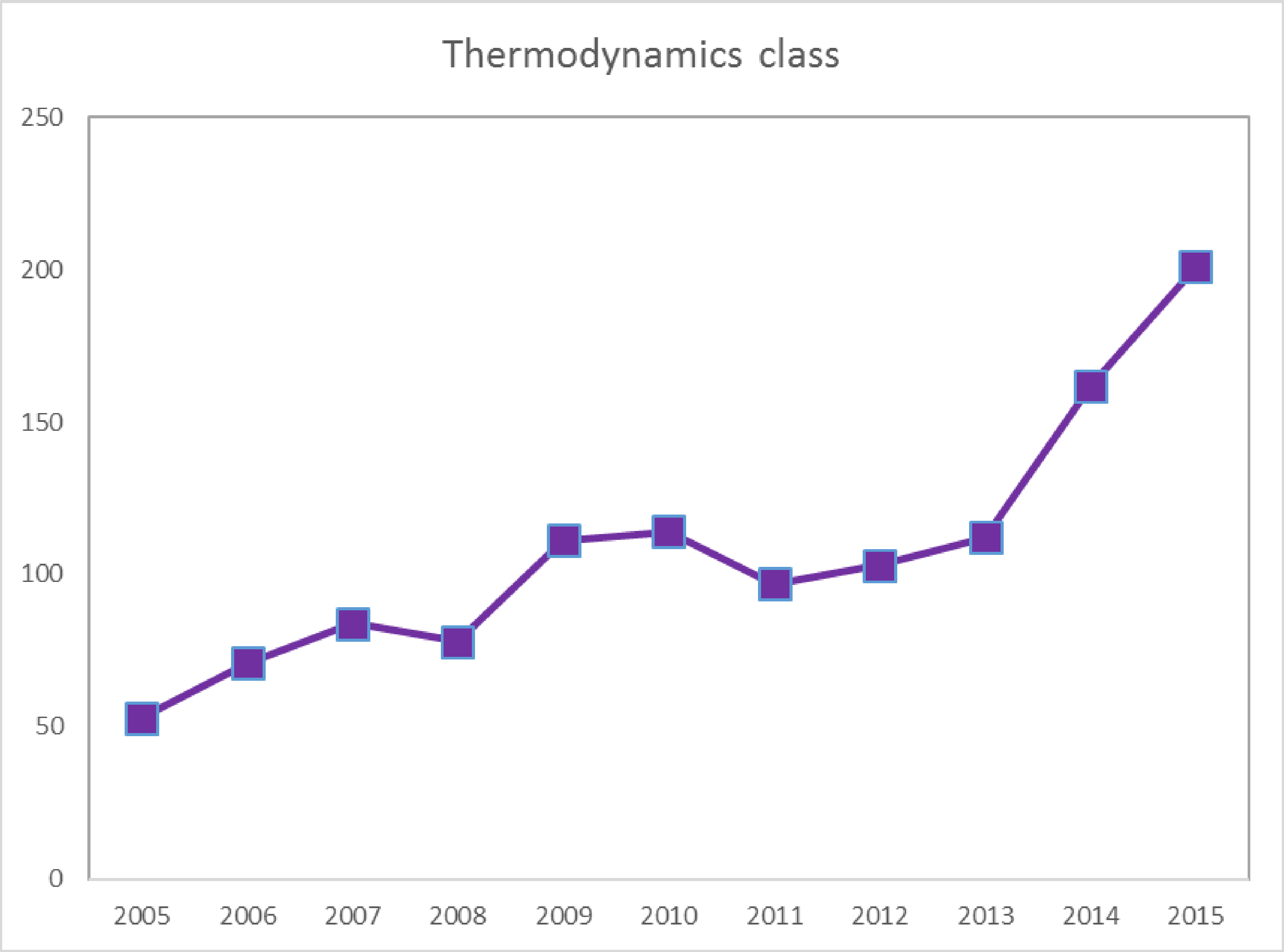
Leveraging your LMS to support large classes



Janet deGrazia

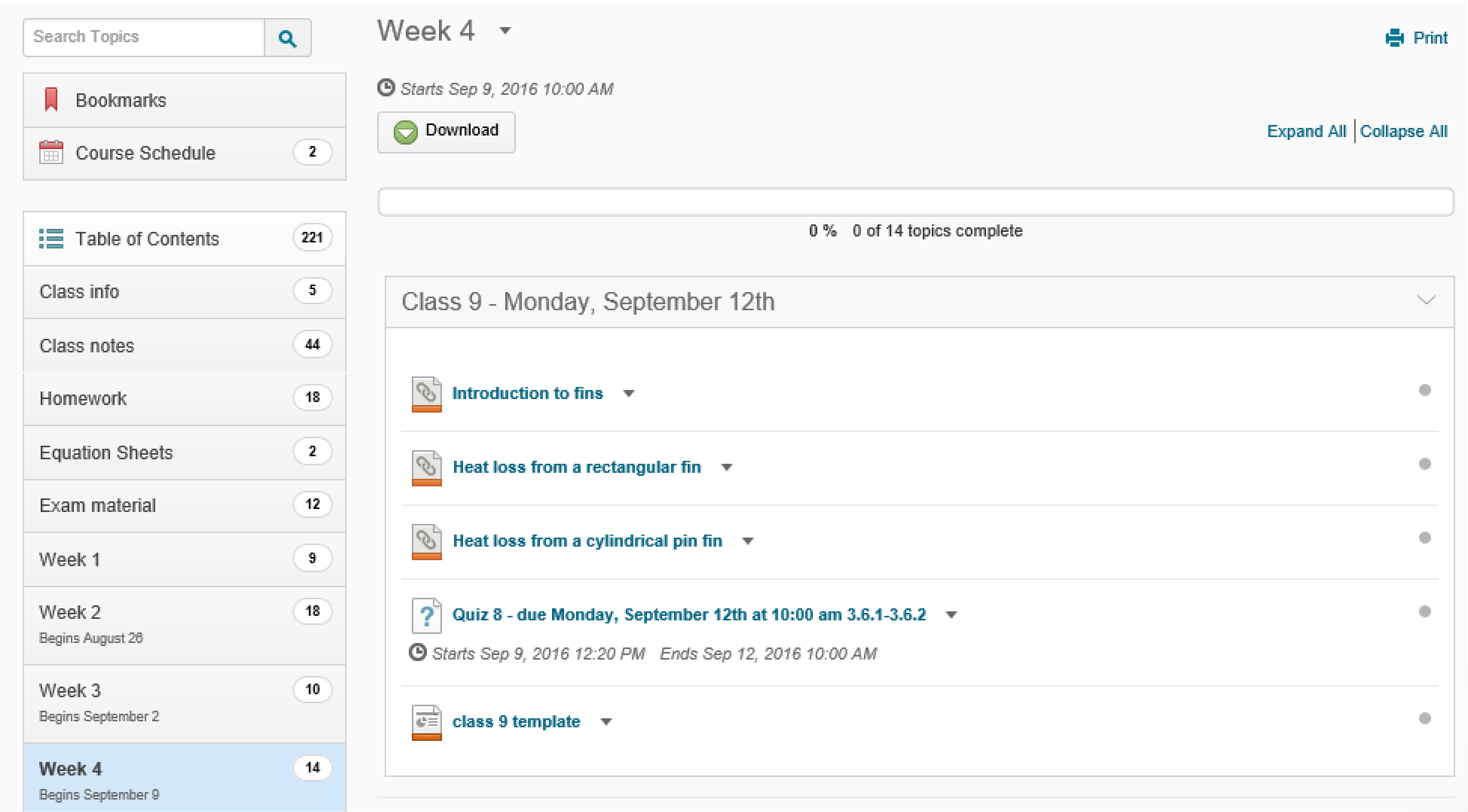
Why?


Thermodynamics class
250
200
150
100
50
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015

Variety of ways to use LMS

- Usual
  - Gradebook
  - Post content
- Beyond
  - Creating a flipped classroom
  - Forming groups
  - On-line homework and quizzes
  - DropBox for homework
  - On-line office hours
  - Reports

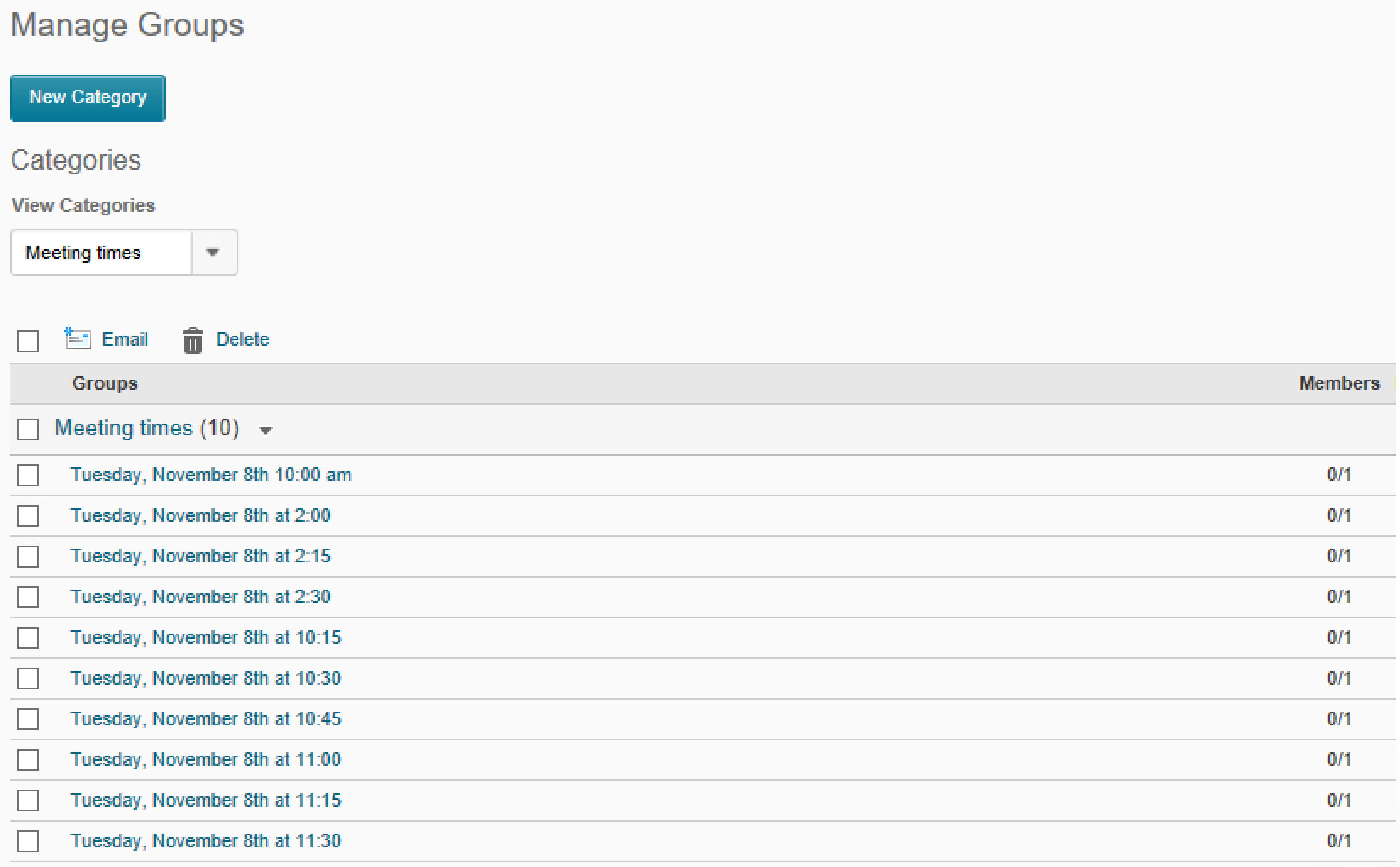
Creating a flipped classroom



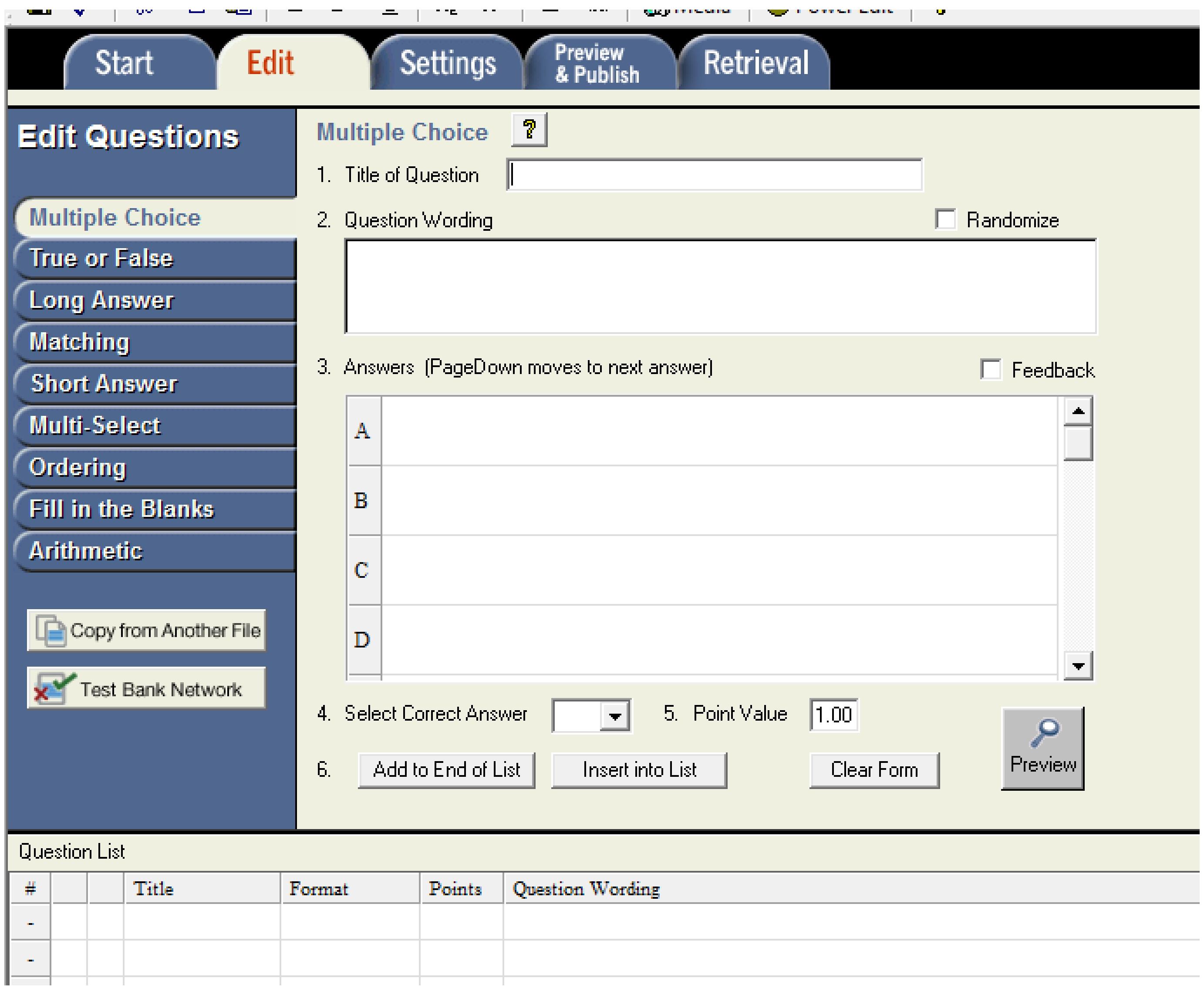
Forming groups

Homework Groups (52)	
Group 1	4/4
Group 2	3/4
Group 3	3/4
Group 4	4/4
Group 5	3/4
Group 6	4/4
Group 7	4/4
Group 8	4/4
Group 9	4/4
Group 10	4/4
Group 11	4/4
Group 12	4/4
Group 13	4/4
Group 14	4/4
Group 15	4/4

Meeting with students



Making on-line assignments easier



Edit Questions

- Multiple Choice
- True or False
- Long Answer
- Matching
- Short Answer
- Multi-Select
- Ordering
- Fill in the Blanks
- Arithmetic

Copy from Another File

Test Bank Network

Multiple Choice ?

1. Title of Question: 12.4.1
2. Question Wording — Randomize

A blackbody can be described as

3. Answers (PageDown moves to next answer) — Feedback

A	a diffuse emitter
B	a perfect absorber
C	a body that emits radiation that is a function of temperature
D	all of the above

4. Select Correct Answer: D
5. Point Value: 1.00
6. Save Changes | Cancel Changes | Clear Form | Preview

Question List

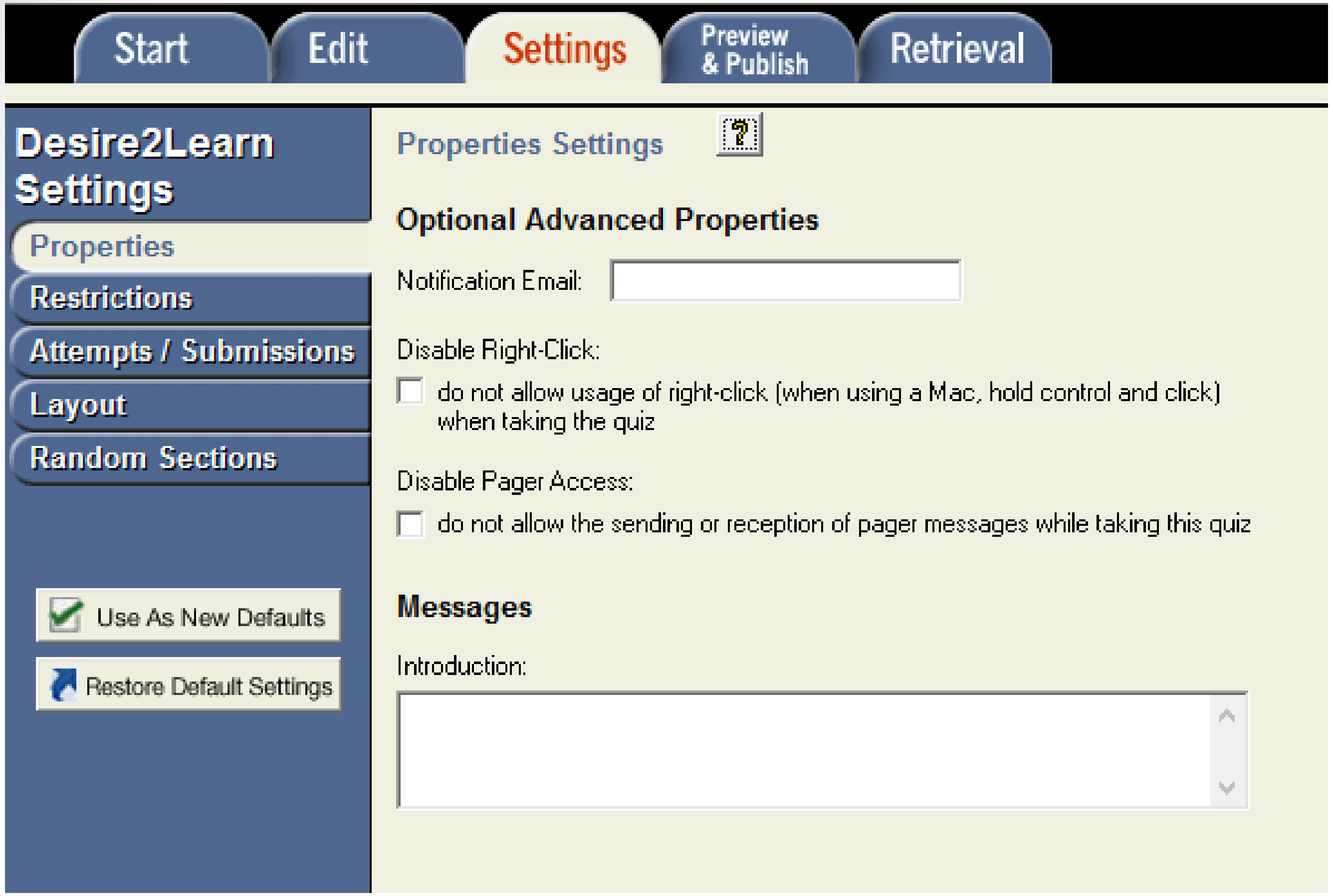
#			Title	Format	Points	Question Wording
1			12.4.1	Multiple Choice	1.0	A blackbody can be described as
2			12.4.2	Multiple Choice	1.0	Which of the following is not a characteristic of an isothermal blac
3			12.4.3	Multiple Choice	1.0	According to Figure 12.12
4			12.4.4	Multiple Choice	1.0	According to Wien's Law, the maximum spectral emissive power
-						
-						

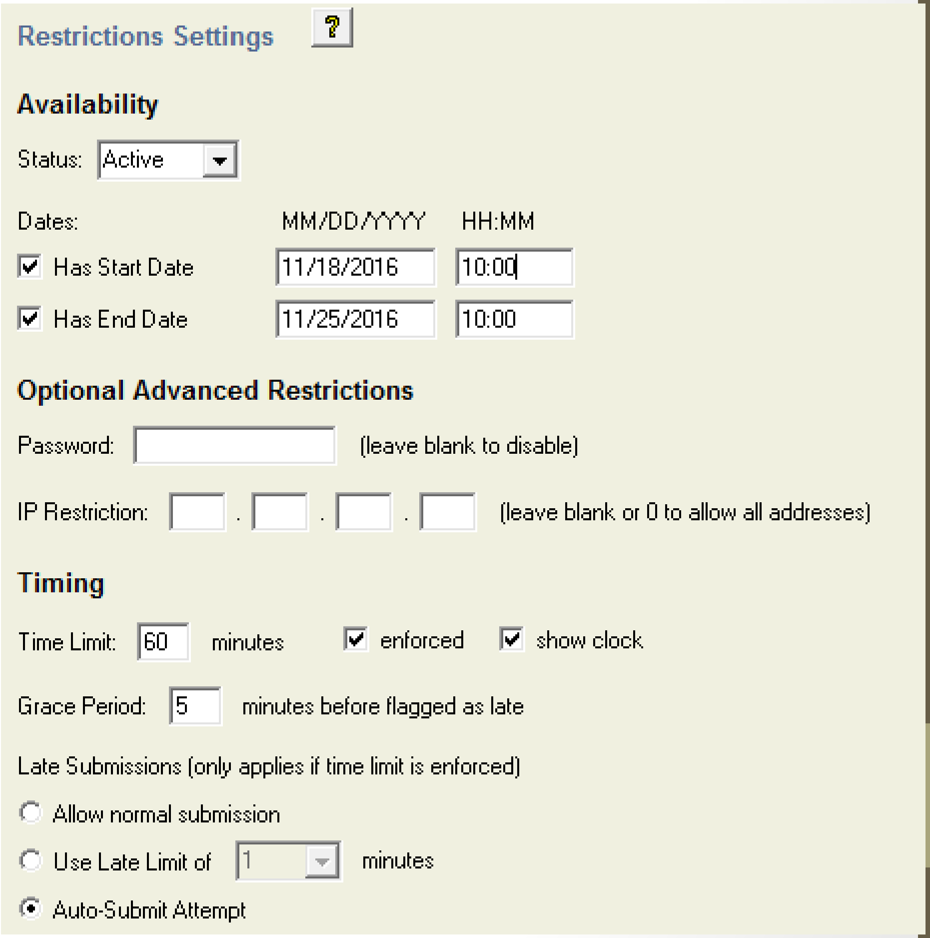
A blackbody can be described as

1) a diffuse emitter
2) a perfect absorber
3) a body that emits radiation that is a function of temperature
4) all of the above

Answer Values

0.0% 1)
0.0% 2)
0.0% 3)
100.0% 4)


Start
Edit
Settings
Preview & Publish
Retrieval
Desire2Learn Settings
Properties
Restrictions
Attempts / Submissions
Layout
Random Sections
Use As New Defaults
Restore Default Settings
Properties Settings
Optional Advanced Properties
Notification Email:
Disable Right-Click:
do not allow usage of right-click (when using a Mac, hold control and click) when taking the quiz
Disable Pager Access:
do not allow the sending or reception of pager messages while taking this quiz
Messages
Introduction:


Restrictions Settings
Availability
Status: Active
Dates: MM/DD/YYYY HH:MM
Has Start Date 11/18/2016 10:00
Has End Date 11/25/2016 10:00
Optional Advanced Restrictions
Password: (leave blank to disable)
IP Restriction: (leave blank or 0 to allow all addresses)
Timing
Time Limit: 60 minutes enforced show clock
Grace Period: 5 minutes before flagged as late
Late Submissions (only applies if time limit is enforced)
Allow normal submission
Use Late Limit of 1 minutes
Auto-Submit Attempt

Quiz List

Help

Current Quizzes	Attempts
Quiz 32 - due Friday, November 11th at 10:00 am, 12.4 Nov 4, 2016 10:00 AM - Nov 11, 2016 10:00 AM	0 / 1
Future Quizzes	**Attempts**
Quiz 33: Due Monday, November 14th at 10:00 am : 12.5,6 Nov 11, 2016 10:00 AM - Nov 14, 2016 10:00 AM	0 / 1
Quiz 34: Due Wednesday, Nov. 30 at 10:00 AM: 13.1-13.2 Nov 25, 2016 10:00 AM - Nov 30, 2016 10:00 AM	0 / 1
Quiz 55 Nov 18, 2016 10:00 AM - Nov 25, 2016 10:00 AM	0 / 1

Grading homework

Homework 10 – due Tuesday, November 15th at 10:00 am **(65 pts)**

Properties

11.42a	**(10 pts)**	$c_{p,c}$ = 4181 J/kg-K		
11.44	**(10 pts)**	$c_{p,c}$ = 4179 J/kg-K	T_{sat} = 355 K	h_{fg} = 2304 kJ/kg
11.49a	**(15 pts)**	$c_{p,w}$ = 4182 J/kg-K	k_w = 0.643 W-m/K	ρ_l = 998.1 kg/m^3
		μ = 548 * 10^{-6} N-s/m^2	Pr = 3.56	k_b = 137 W/m-K
12.16	**(15 pts)**			
12.24	**(5 pts)**			
12.29a	**(10 pts)**			

Create Rubric

Homework 8 Problems	Points
9.25	10 points
9.27	20 points
9.44	25 points
9.61	10 points
9.72	20 points
9.83	15 points
Overall Score	**Level 1** **0 or more**

Students submit to DropBox

Group 1

Heat Transfer HW7- Group 1.pdf (11.96 MB)

Group 10

HTHW7.pdf (4.71 MB)

Group 11

Heat Transfer HW #7-2.pdf (5.37 MB)

Group 12

heat homework 7.pdf (3.61 MB)

Group 13

CHEN 3210 Homework 7.pdf (4.7 MB)

8.31) • $K_{plastic} = 0.15 \frac{W}{m \cdot K}$, $D_i = 0.15\ m$, $D_o = 0.17\ m$

• $T_\infty = 17^\circ C$, $h_o \approx 1500 \frac{W}{m^2 \cdot K}$

• $T_{mi} = 29^\circ C$

• $AV = 0.025\ m^3/s$

• $T_{mo} = 21^\circ C$

• $L = ???$

$$T_\infty \xrightarrow{\frac{1}{h_o \pi D_o L}} T_{s1} \xrightarrow{\frac{\ln(D_o/D_i)}{2\pi k L}} T_{s2} \xrightarrow{\frac{1}{h_i \pi D_i L}} T_{air}$$

$$\frac{T_\infty - T_{mo}}{T_\infty - T_{mi}} = e^{\left(\frac{-1}{\dot{m} c_p R_{tot}}\right)}$$

$$R_{tot} = \frac{1}{L}\left[\frac{1}{h_o \pi D_o} + \frac{\ln(D_o/D_i)}{2\pi K} + \frac{1}{h_i \pi D_i}\right]$$

$\Rightarrow h_i = ??$ $\Rightarrow Re = \frac{4\dot{m}}{\pi D_i \mu} =$

$\Rightarrow$ Air Properties: $T_m = \frac{29+21}{2} = 25^\circ C = 298\ K$

Homework 7 Problems	Points	Score and Feedback
8.27	10 points	10 points
8.31	15 points	15 points
8.33	15 points	4 points Missing Reynolds numer and Nusselt number calculations, h value, and correct length.
8.37	20 points	20 points
8.62	15 points	15 points
8.74	15 points	15 points
8.86	20 points	20 points
8.98	10 points	10 points
Overall Score	Level 1 0 or more	Score and Feedback
		109 points

Save & Record | Save | Cancel

Previous Group

Group 4 of 52

<< Back to User Submissions

Homework5_Group12.pdf

Homework 5.

5.85. $T_1 = 50°C$ suddenly reduce to $T_s = 20°C$

Find q'' for 30 min when $T_s = 20°C$.

Asphalt : $\rho = 2115 \frac{kg}{m^3}$ $k = 0.062 \frac{W}{m \cdot k}$ $C = 920$ J/kg

Semi infinite solid problem.

Case 1 : Constant surface temperature.

Next Group

Group 12

See All Group 12 Members

Hide Folder Information

Homework 5

Edit Dropbox Preview Student View

Show Dropbox Folder Dates

Evaluation

Rubrics

Homework 5

Score: **134 / 135 points - 99.26 %**

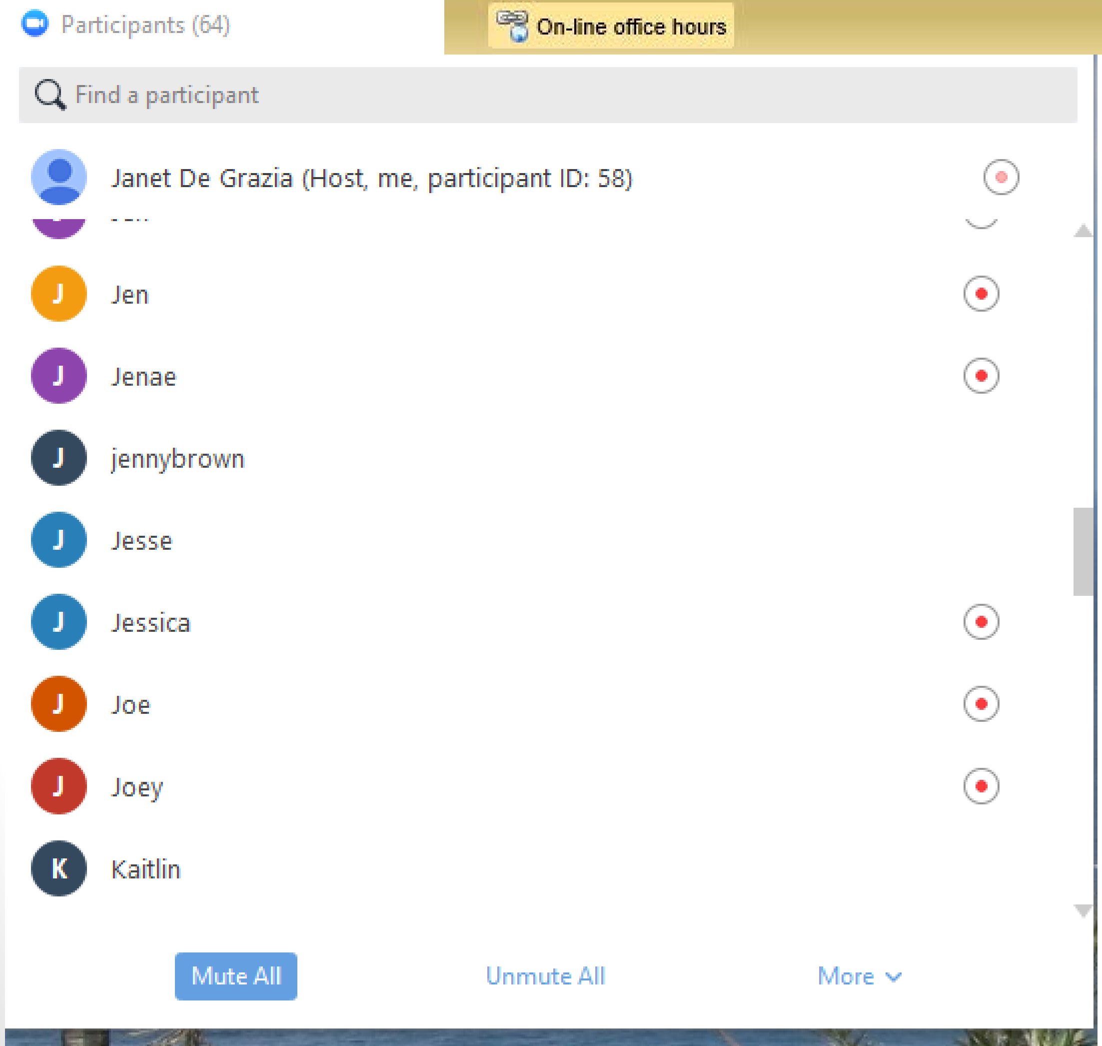
Level achieved: **Level 1**

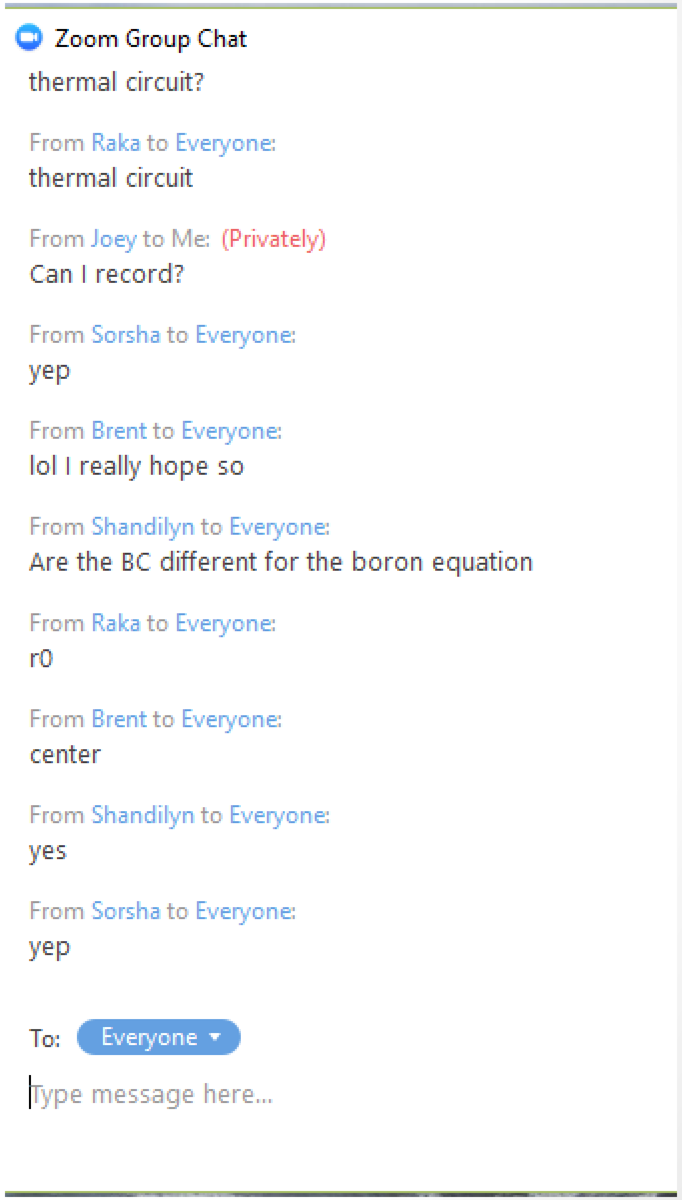
Score

134 / 135

Grade Item: Homework 5

On-line office hours





10.32

Friday, October 28, 2016 1:18 PM

10.32 Consider a horizontal, $D = 1$-mm-diameter platinum wire suspended in saturated water at atmospheric pressure. The wire is heated by an electrical current. Determine the heat flux from the wire at the instant when the surface of the wire reaches its melting point. Determine the corresponding centerline temperature of the wire. Due to oxidation at very high temperature, the wire emissivity is $\varepsilon = 0.80$ when it burns out. The water vapor properties at the film temperature of 1209 K are $\rho_v = 0.189\ \text{kg/m}^3$, $c_{p,v} = 2404\ \text{J/kg}\cdot\text{K}$, $\nu_v = 231 \times 10^{-6}\ \text{m}^2/\text{s}$, $k_v = 0.113\ \text{W/m}\cdot\text{K}$.

Screen clipping taken: 10/28/2016 1:19 PM

T_s = melting pt of Pt

$q''_s = \bar{h}(T_s - T_{sat})$ ΔT_e

$E_{gen} = E_{out}$

$\dot{q}\dfrac{\pi D^2}{4} = q''_s \pi D$

$\bar{h}$ = combines $\bar{h}_{conv}$ and $\bar{h}_{rad}$

$\overline{Nu}_D$ $\bar{h}_{rad}$

Table C3 $\rightarrow$ $T(r)$ $\rightarrow$ at $r = 0$

Introduction to fins ✓	2	0:00:06	Oct 4, 2016 2:44 PM
Heat loss from a rectangular fin ✓	2	0:03:59	Oct 4, 2016 7:39 PM
Heat loss from a cylindrical pin fin ✓	1	0:19:36	Oct 4, 2016 3:34 PM
Quiz 8 - due Monday, September 12th at 10:00 am 3.6.1-3.6.4	-	-	-
class 9 template	-	-	-
Class 10 - Wednesday, September 14th	-	-	-
Rectangular fin array ✓	2	0:22:10	Oct 4, 2016 7:52 PM
Efficiency for an array of fins ✓	1	0:09:58	Oct 5, 2016 5:13 PM
Quiz 9 - Due Wednesday, September 14th at 10:00 am 3.65	-	-	-
class 10 template	-	-	-
Class 11 - Friday, September 16th	-	-	-
Introduction to lumped capacitance ✓	2	0:13:12	Oct 5, 2016 5:23 PM
Lumped capacitance example ✓	1	0:09:56	Sep 18, 2016 4:49 PM
Methods for solving transient heat transfer problems ✓	1	0:03:41	Oct 5, 2016 5:58 PM
class 11 - lumped capacitance template	-	-	-
Quiz 10 - due Friday, September 16th at 10:00 am 5.1-3	-	-	-
Week 5	-	-	-
Class 12 - Monday, September 19th	-	-	-
Introduction to transient convection	-	-	-
One-term approximation	-	-	-
Plane wall with convection example	-	-	-
class 12 template	-	-	-
Quiz 11 - due September 19th at 10:00 am Ch. 5.4-6	-	-	-
Class 13 - Wednesday, September 21st	-	-	-
Analytical solution for a transient problem	-	-	-
Total energy from a sphere	-	-	-
Transient conduction in a semi-infinite medium ✓	1	0:09:31	Oct 5, 2016 6:09 PM
Semi-infinite solid ✓	1	0:02:43	Oct 5, 2016 6:19 PM
class 13 template	-	-	-

Conclusions

- Large classes can be challenging to manage
- Using the resources of a learning management system can save time and stress
- Adding available technologies to your system can make it even more efficient
- This is only the part of how you can make larger classes easier to manage – talk to me about other techniques I’ve used
- And what does this have to do with John?