

PH301

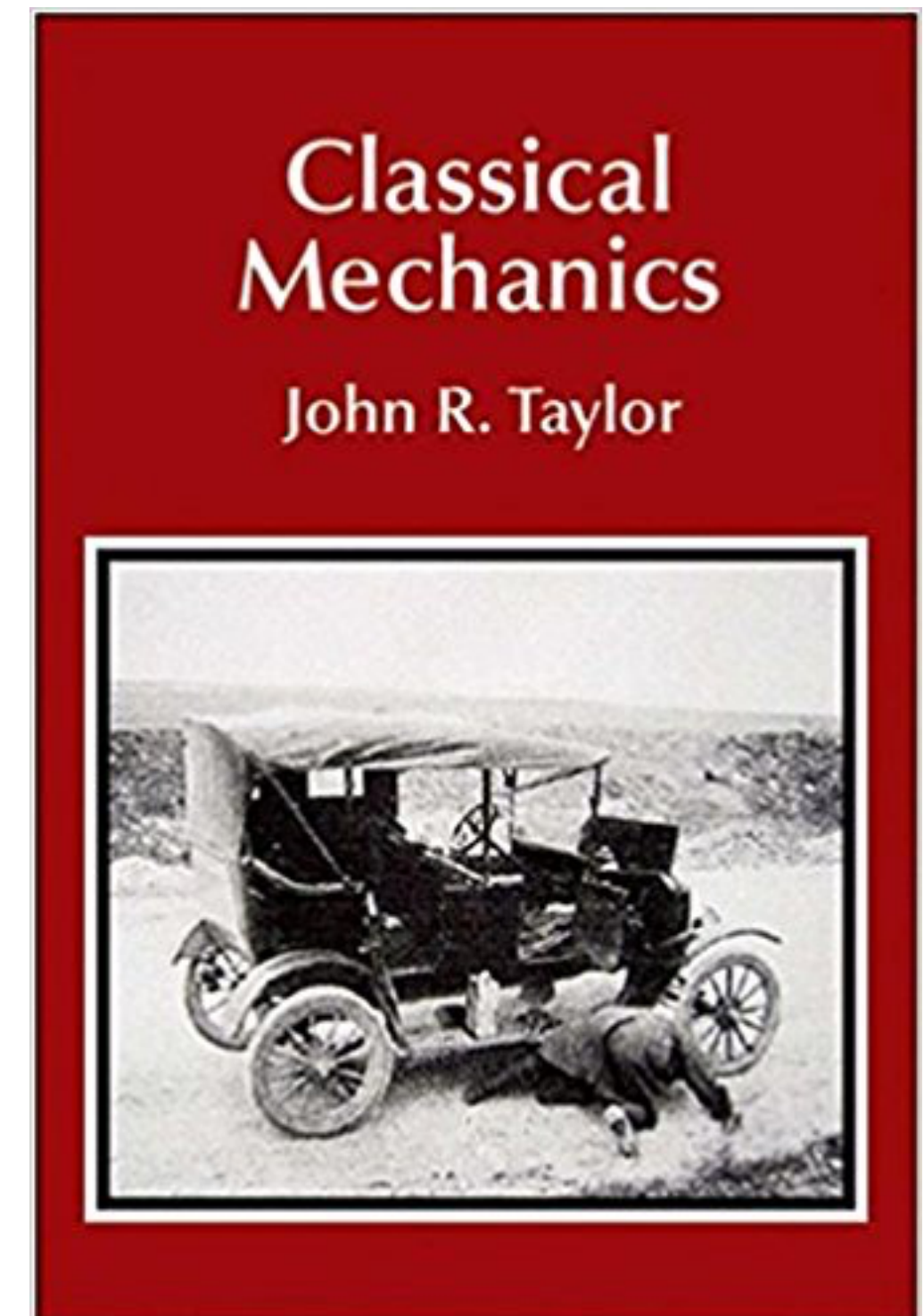
Patrick LeClair

Contact

- pleclair@ua.edu put “PH301” in subject line
- Office: Gallalee 208 (enter through Gallalee 206)
- Office hours: Mon-Thurs 11-12 and by appointment (email)
- ODS accommodations? let me know as soon as you can
- Known athletic/academic travel? same

Course content

- Like PH105, but with new techniques (esp. math)
- Fluency in calculus is assumed. We will use a little of what you learned/are learning in MA238
- Get familiar with things like Wolfram Alpha or Mathematica



Schedule (subject to change)

- Week 1: Newton's laws
- Week 2: projectile motion (with drag)
- Week 3: momentum
- Week 4: energy
- Week 5: oscillations
- Week 6: Calculus of variations
- Week 7-8: Lagrangian mechanics

Schedule (subject to change)

- Week 9-10: central forces
- Week 11: coupled oscillations
- Week 12: non-inertial frames
- Week 13: rigid body rotation
- Week 14: collision theory
- Week 15: continuum mechanics, Hamiltonian mechanics
- Week 16: review/catch-up

Date	Topic	Reading (Taylor)	Assignments	Extra	Note
22-Aug	Newton's Laws	1.4-1.6		Review Taylor 1.1-3	
24-Aug	Newton's Laws	1.7	HW0 due (short)	Short math guide	
27-Aug	Projectile motion / linear air resistance	2.1-3			
29-Aug	Projectile motion / quadratic air resistance	2.3-4			Add/Drop day
31-Aug	Projectile motion / Charge in a B field	2.5, 2.7	HW1 due (Ch. 1-2)	Review Taylor 2.6	
3-Sep	Labor Day / no class				
5-Sep	Momentum, rockets, center of mass	3.1-3			
7-Sep	Angular momentum	3.4-5	HW2 due (Ch. 2)		
10-Sep	Kinetic energy, Forces & Potential energy	4.1-4			
12-Sep	Time dependence, 1D systems	4.5-7		Curved Paths notes	Review spherical polar coordinates
14-Sep	Central Forces, multiparticle systems	4.8-10	HW3 due (Ch. 3-4)		
17-Sep	Oscillations	5.1-3			
19-Sep	Damping and Driven oscillations	5.4-5			
21-Sep	Resonance, Fourier series in brief	5.6-7	HW4 due (Ch. 5)		
24-Sep	Calculus of variations	6.1-2			
26-Sep	EXAM 1				
28-Sep	Calculus of variations	6.3-4	HW5 due (Ch. 6, short)		
1-Oct	Lagrange's equations	7.1			
3-Oct	Lagrange's equations	7.2-3			
5-Oct	Lagrange's equations	7.4-5			
8-Oct	Lagrange's equations	7.6-7			
10-Oct	Lagrange's equations / examples	7.10			
12-Oct	Central Forces	8.1-3	HW 6 Due (Ch. 7)		
15-Oct	Central Forces	8.3-4			
17-Oct	Central Forces	8.5-7			
19-Oct	Central Forces	8.7-8, review	HW7 due (Ch. 7-8)		
22-Oct	Coupled Oscillations	11.1-3			
24-Oct	Coupled Oscillations	11.3-4			
26-Oct	Fall Break / no class				
29-Oct	Coupled Oscillations	11.5-6	HW8 due (Ch. 8-11)		
31-Oct	Coupled Oscillations	11.6-7			Drop day
2-Nov	Non-inertial frames	9.1-2			
5-Nov	Non-inertial frames	9.3-5	HW9 due (Ch. 11,9)		
7-Nov	EXAM 2				
9-Nov	Non-inertial frames	9.6-8			
12-Nov	Non-inertial frames	9.9-10			
14-Nov	Rigid Body Rotation	10.2-3			
16-Nov	Rigid Body Rotation	10.4-5			
19-Nov	Rigid Body Rotation	10.6-8	HW10 due (Ch. 9-10)		Review 10.1
21-Nov	Thanksgiving / no class				
23-Nov	Thanksgiving / no class				
26-Nov	Rigid Body Rotation	review			
28-Nov	Collision Theory	14.1-3			
30-Nov	Collision Theory	14.4-6	HW11 due (Ch. 14)		Last day for exams
3-Dec	Continuum Mechanics	16.1-4		Fluids notes	
5-Dec	Continuum Mechanics	16.5-7			
7-Dec	Hamiltonian Mechanics	13.1-3	HW 12 due (Ch. 14,16)		
11-Dec	FINAL EXAM 7-9:30pm				

You can find this on Blackboard.

Grading

- Exam 1: 20% (Wed 26 Sept)
- Exam 2: 20% (Wed 7 Nov)
- Homework: 20% (“weekly”)
- Participation (online): 10%
- Final Exam: 30% (Fri 11 Dec 7-9:30pm)

Homework & Exams

- Homework: more or less weekly, show your work, ~10 problems
 - posted on Blackboard.
 - group work encouraged, but turn in your own
- Exams: all 'show your work' problems, typically 1 drop problem
 - non-obvious formulas/integrals/etc will be given



packback

Fearlessly curious.



Our class is using Packback Questions for curious, out-of-class discussion.

- Learn how the things you're learning in class apply to your future
- Ask questions about the topics that interest you most
- Earn participation points for being curious
- Gain new perspectives from reading responses and questions from your peers
- Be rewarded for being curious!

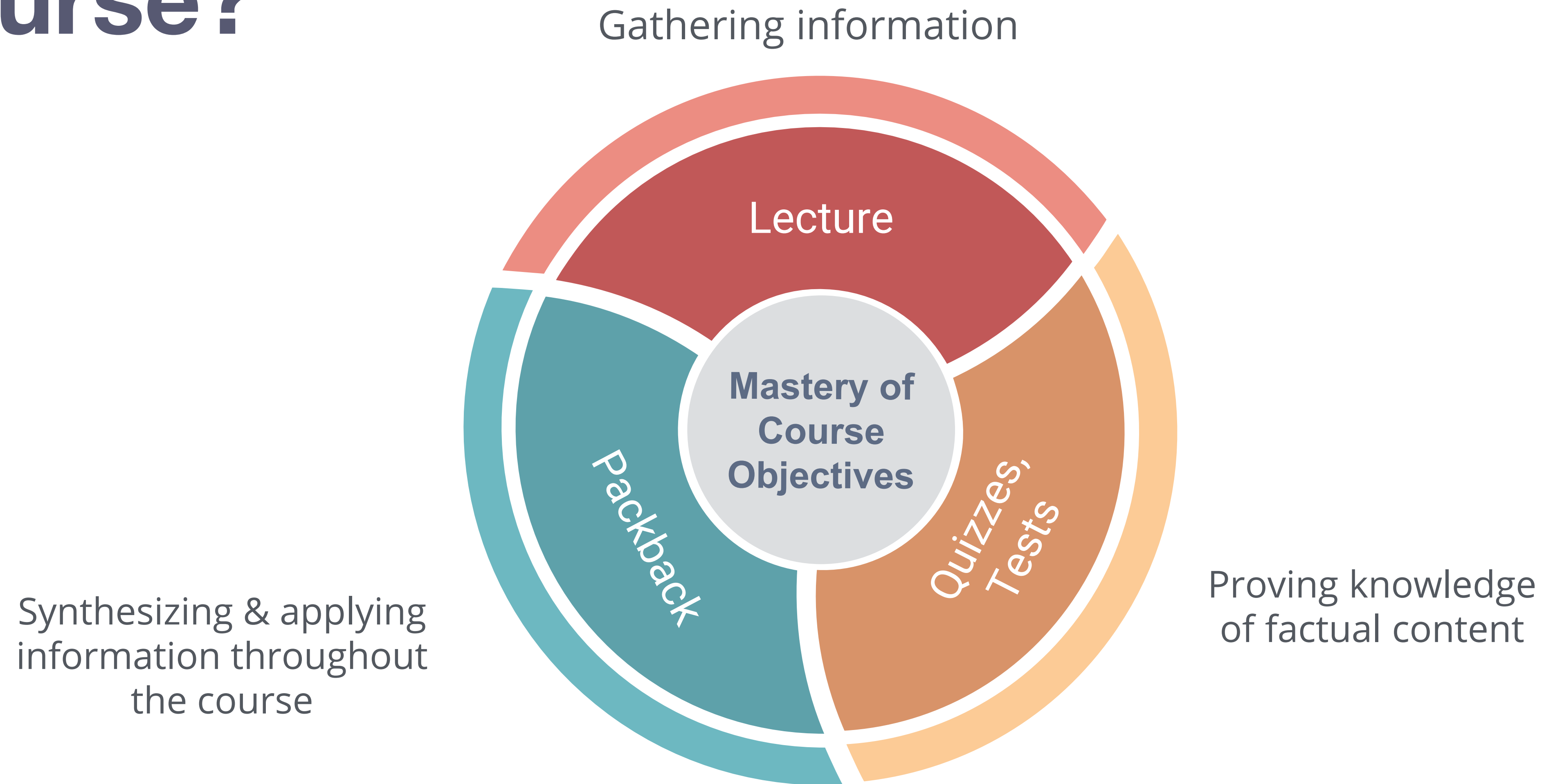


Why are we using Packback Questions?

- Packback will help you apply the information you are learning in class, to how it relates to our everyday lives.
- **You will gain many academic and professional skills including:**
 - The ability to ask critical thinking questions
 - Use supporting evidence when making a claim
 - Learning multiple perspectives from your peers
 - Strong writing skills when crafting detailed answers

Packback exists to awaken and fuel the lifelong curiosity in every student.

How does Packback fit into this course?



Packback exists to awaken and fuel the lifelong curiosity in every student.

How are we using Packback Questions?

Each week you will be required to:

- post 3 times
- any combination of asking or answering questions

Packback is worth 10% of your overall grade.

Packback is a valuable part of your learning for this course, therefore is considered as part of your overall grade.

Packback exists to awaken and fuel the lifelong curiosity in every student.

What to post in Packback Questions



Open-ended questions that have more than one right answer

- Try question starters like “How could”, “Why”, and “What might happen”
- Ask for **examples and ideas**, instead of answers and **definitions**



Questions asking for extra help that show your work

- Show your work or progress up to where you got stuck
- Provide details to explain **exactly** what you need help with!



Share a resource, article or idea that inspired you and ask for responses

- Share the resource (video, article, link) that inspired your curiosity

What **not** to post in Packback Questions

- X** No questions about the tests, homework, or class logistics
 - *For example: "Is class cancelled today?" or "What's the answer to #4?"*
- X** No duplicate questions or answers
- X** No profanity or inflammatory language; be kind and mindful
- X** No cheating (this is not a place to get answers to homework)
- X** No Closed-Ended Questions (Questions with only one right answer)
- X** No plagiarism, or posts that are primarily quotes from other sources

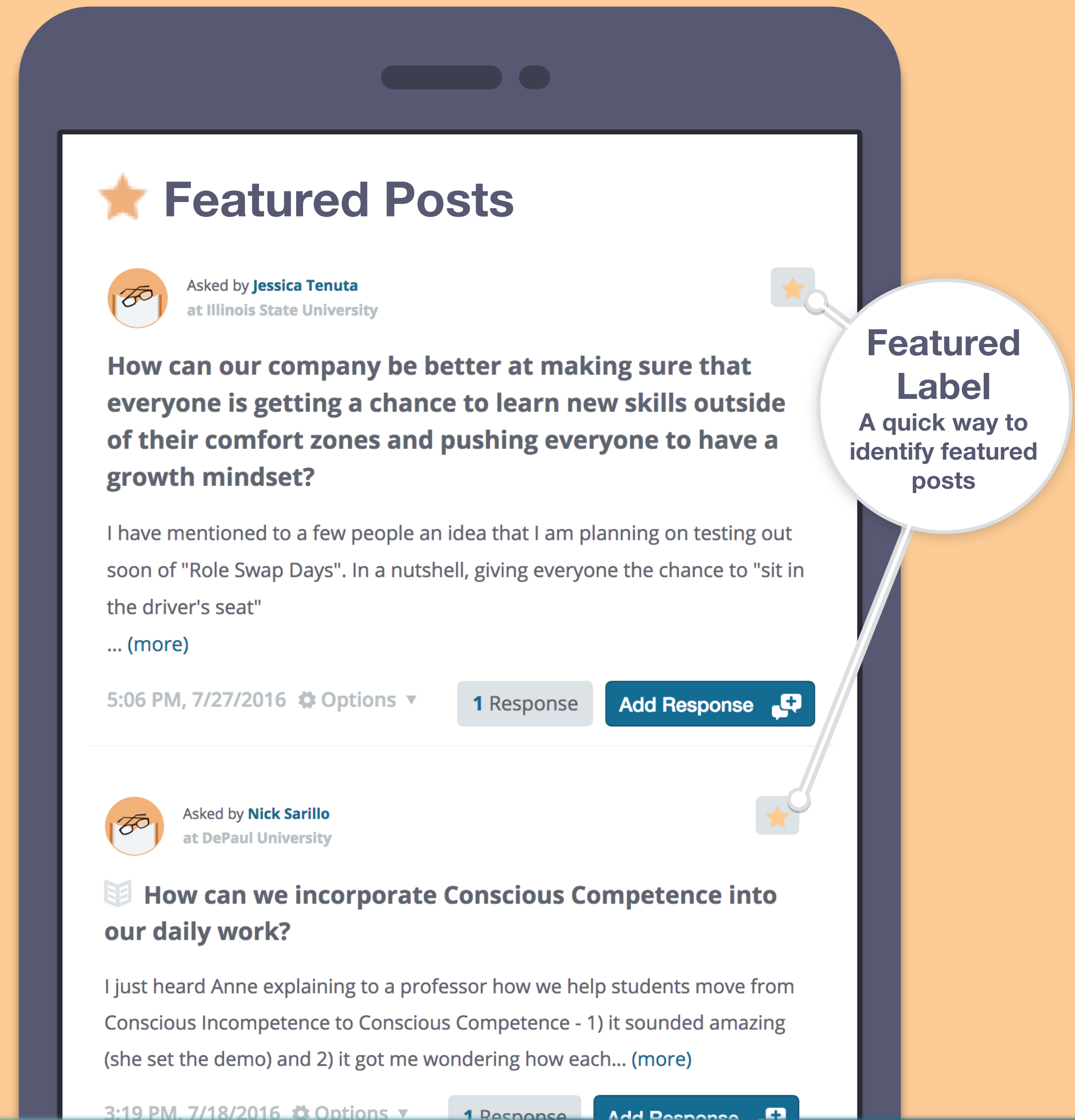
The Featured Tab

The Featured Tab keeps all the best posts in your community just one click away.

How do posts get featured?

The Community Health Algorithm suggests great posts to your Professor.

Packback Moderators or your professor hand-feature the “can’t miss” posts each week for you to read.



“Flagged” Posts

If your post is “Flagged”, it was flagged by a community member OR detected by our algorithm for potentially violating a Community Guideline.

Will all “Flagged” posts be deleted?

No! Flagged posts are reviewed by our Moderators. Just because a post is flagged does not mean it will be deleted.

Very short answers will always be removed.

⚠ This question is flagged. If you add a response on this thread, it may be deleted.

The screenshot shows a 'Moderation Queue' interface with a table of flagged posts. A callout bubble points to the 'Reporter' column for the first two rows, stating 'Reporter Flagged by AI'. Another callout bubble points to the 'Reason' column for the first two rows, stating '“Flag” Reason Algorithm Criteria Triggered'. A third callout bubble points to the 'Moderator Actions' column, listing 'Edit', 'Dismiss', and 'Delete' with checkboxes.

Text	Reporter	Reason	Moderator Actions
Deckop combined Reich: if capitalism starts to use universalism as decision-making model , will it conflict with profit maximization?	System	Too Class-Specific	<input checked="" type="checkbox"/> Edit <input checked="" type="checkbox"/> Dismiss <input checked="" type="checkbox"/> Delete
Friedman combined with Wicks: Will local living economy free companies from their corporate responsibility?	System	Too Class-Specific	<input checked="" type="checkbox"/> Edit <input checked="" type="checkbox"/> Dismiss <input checked="" type="checkbox"/> Delete
fat to replace bone marrow?	John S.	Not a Question	<input type="checkbox"/> Edit <input type="checkbox"/> Dismiss <input type="checkbox"/> Delete
What is the relationship between Non-communicable diseases and aging?	System	Closed-Ended	<input type="checkbox"/> Edit <input type="checkbox"/> Dismiss <input type="checkbox"/> Delete
What is the main threat to the health of young adults?	System	Closed-Ended	<input type="checkbox"/> Edit <input type="checkbox"/> Dismiss <input type="checkbox"/> Delete
What is the definition of diaspora?	System	Close-Ended	<input type="checkbox"/> Edit <input type="checkbox"/> Dismiss <input type="checkbox"/> Delete
What the is the answer to #2?	System	Too Class-Specific	<input type="checkbox"/> Edit <input type="checkbox"/> Dismiss <input type="checkbox"/> Delete
When did the civil war end?	System	Closed-Ended	<input type="checkbox"/> Edit <input type="checkbox"/> Dismiss <input type="checkbox"/> Delete

“Moderated” Posts

If your post was “Flagged”, and it ultimately violated a Community Guideline, it will be moderated

What does it mean if my post is “moderated”?

- Moderated posts are removed from the curiosity feed.
- You will then be sent a coaching email and prompted to edit and re-publish the post.
- Note: this post must be re-published by the deadline, or you will not receive credit for that post.

⚠ This question is flagged. If you add a response on this thread, it may be deleted.

Moderation Queue

Text	Reporter	Reason
Deckop combined Reich: if capitalism starts to use universalism as decision-making model , will it conflict with profit maximization?	System	Too Class-Specific
Friedman combined with Wicks: Will local living economy free companies from their corporate responsibility?	System	Too Class-Specific
fat to replace bone marrow?	John S.	Not a Question
What is the relationship between Non-communicable diseases and aging?	System	Closed-Ended
What is the main threat to the health of young adults?	System	Closed-Ended
What is the definition of diaspora?	System	Close-Ended
What the is the answer to #2?	System	Too Class-Specific
When did the civil war end?	System	Closed-Ended

Reporter
Flagged by AI

“Flag” Reason
Algorithm Criteria Triggered

Moderator Actions
 Edit
 Dismiss
 Delete

The Learner Leaderboard

See how your **Curiosity Score** stacks up to your classmates in the Learner Leaderboard

How the Curiosity Score is calculated

Depth: How detailed your post is

Presentation: How much effort was used

Credibility: Did your post cite sources?

Your professor may grade based on Curiosity Scores.



How to get started on Packback

1. Check your inbox for an email from Packback

- The email may be directed to spam, so search your entire inbox for an email from holla@packback.co.

1. Finish creating your account (if you received an email) OR create a new account

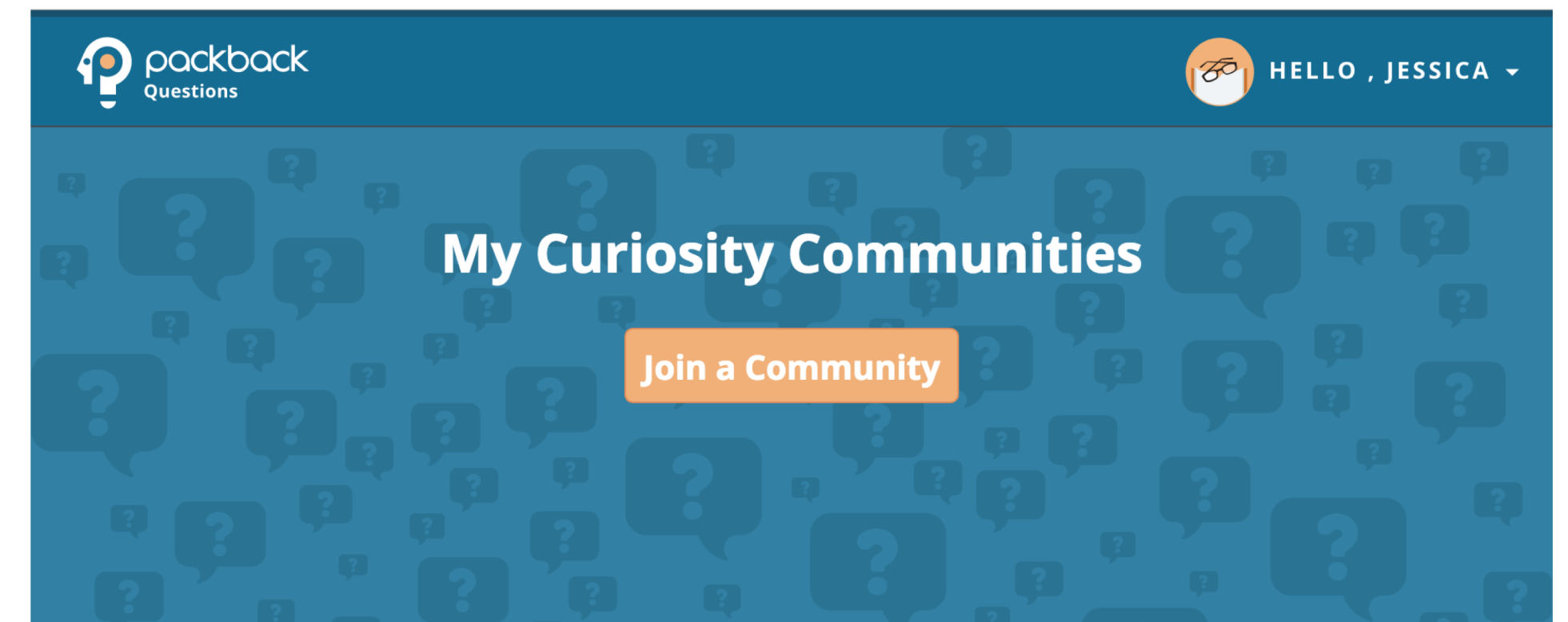
- If you were on your professor's roster, that means we will have created an account for you. You just need to set your password.

2. Log in & navigate to the "Join a Community" tab

- If you see your class, click the "Join Community" button on the community to finish registration.
- If you do NOT see your class, enter the access code from the syllabus into "Find Community" module.

CODE:

1F5E90BA-68A7-11E0-7CBA-E554510FA1E0




View Communities

Join a Community

Join Communities

You're on the roster for the following communities. Click "Join Community" to finish registration.



Smith- Chem 1032 - General Chemistry II
Gerald Ulysses, American Academy of Art

[Join Community](#) [Drop class](#)

Looking for a different community?

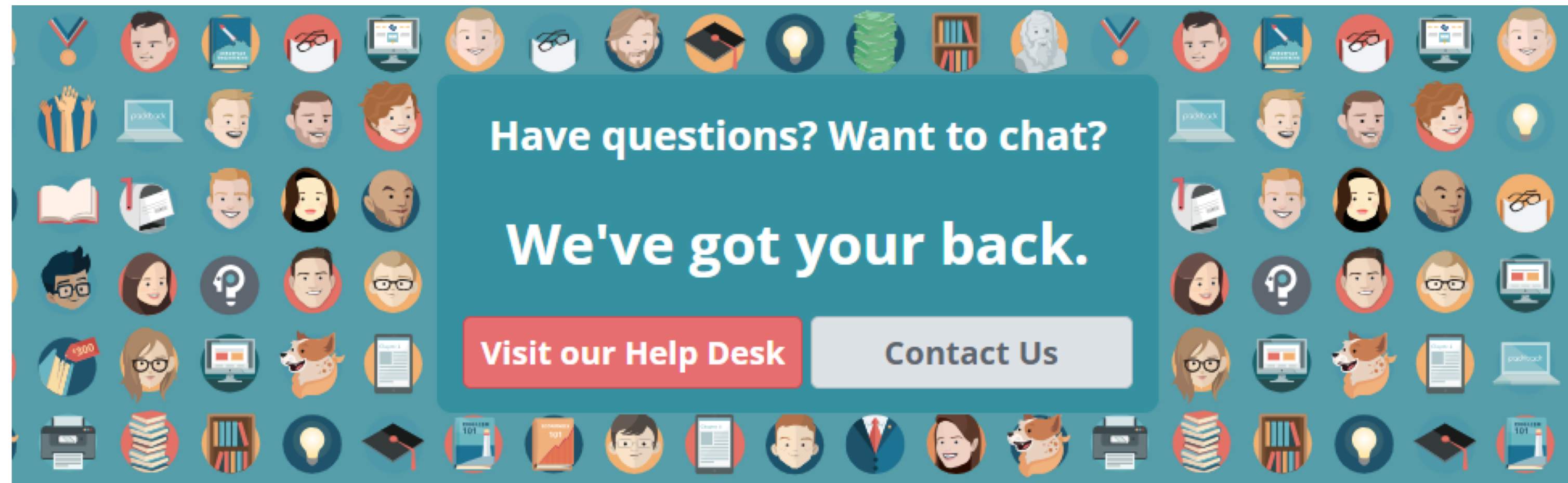
testcommunity

Find Community

▲ Enter a Community Access Code above to find a community.

Have any questions?

Check our **Help Desk**, click “**Contact Us**” or email holla@packback.co



What should I ask Packback?

- Why didn't my payment process?
- What is my Curiosity Score?
- Why is my question flagged?
- Anything Packback related...

What should I ask my professor?

- When is the next test?
- How should I study for the final?
- My dog ate my homework?
- Anything else NOT Packback related...

Packback

- a controlled version of GroupMe (which A&S is well aware of)
- like Reddit or StackExchange
- post 3 times per week (Q+A, any combo)
 - up/down vote both Q & A
- start next week

Misc

- no formal attendance policy
- exams may rely on things we do in class
- quizzes are possible but unlikely
- missing exams: bad
 - if you know ahead of time, let me know
 - if not possible, ASAP after
 - acceptable reason = makeup or weight final
- will try to get graded work back quickly, grades on Blackboard

Online

- [Blackboard](#)
- [Files](#) (slides, schedule, notes; will usually put on Blackboard as well)

Today

- A bit of review from Ch. 1. Hopefully it is really review.