

Dartmouth Bikes Syllabus - Winter 2017



Bikes 123: The Biking machine Spring 2017

Classroom: House Center B
Class time: Tuesdays 5-7pm
Instructor: Dartmouth Bikes Mechanics
Office Location: Basement of Fahey
Email: dartmouth.bikes@dartmouth.edu
Office Hours: Please see our website www.dartmouthbikes.com

Course Description:

This is a 4 week course introducing students to the basics of bike mechanics and maintenance. Students will work under the instruction of the Dartmouth Bikes Team. Our team has gone through extensive training with local bike shops, and we want to share what we've learned with you!

Course goals:

To teach you how to inspect a bike and keep it safe for riding. To understand bike systems and to provide access to bike resources available on campus.

Prerequisites:

None

Gifts:

Upon the successful completion of the workshop - attending 3 out of the 4 sessions you will receive a Dartmouth Bikes hat and we will subsidize the cost of a bicycle multi tool.

Course materials:

Jones, C Calvin. *Big Blue Book of Bicycle Repair: A Do-it-yourself Bicycle Repair Guide from Park Tool*. 3rd ed. Saint Paul, MN: Park Tool Co., ©2008.

- Optional - copy provided at the workshop.

Timeline:**First lecture:** Introductions and Basic maintenance 101

Introductions

Workshop:

- 1) How to put a bike on a stand - bike fitting
- 2) flat tires - causes
- 3) Change a flat - most time here!
- 4) Greasing chains, rust removal.
- 5) Do's and Don'ts of riding - obstacle course around the house center

Second lecture: Brakes

Lecture:

- 1) Things you need to check before adjusting brakes
 - a) Types of brakes - disc and cables - hydraulics
 - b) Is the wheel true?
 - c) Brake pads worn out?
 - d) Brake mechanism ok?

Workshop:

- 2) Truing - how to true without a truing stand
 - a) Bring a truing stand and cable and housing
 - b) One half on truing stand the other on a bike
- 3) Brakes;
 - a) Worn out? - replace.
 - b) Angle of the brakes - offset
 - c) Oil the breaking mechanism not the brakes!

Third lecture: Cables and housing, shifting

Lecture:

- 1) types of shifting,
- 2) adjusting,
- 3) worn out chains,
- 4) front and back shifting,

Workshop: Shifting

- A. Look at alignment
- B. first Downshift - unscrew tension
- C. set limits
- D. adjust tension
- E. Do over again if it does not work

Try it all on your own - mess up limit screws and release tension

Fourth - final lecture: - Bike safety with S&S, miscellaneous and test -

Lecture:

S&S Officer Hunt - biking at dartmouth

Workshop:

1. Split the group into sub sections -Fix a Bike!
2. Do a photo at the end.
3. Feedback form
4. Multitools and and a hat

Resources:

Multi tool, hat, checklists, names and emails, and numbers and GroupMe

Academic Honor principle:

Please collaborate as much as you can!

Expectations:

To get to know each other (you and the bike) and have fun. In order to do that we expect you to come to every class!

Youtube Videos

Lesson 1: Intro/Tires

How to Choose the Best Type of Bicycle for You:

<https://www.youtube.com/watch?v=mcRe5w4RArU>

How to Remove and Install a Bicycle Tire & Tube:

<https://www.youtube.com/watch?v=eqR6nlZNeU8>

Lesson 2: Wheel/Brakes

The Park Tool Guide to Rim Brakes

https://www.youtube.com/watch?annotation_id=annotation_4242956097&feature=iv&index=1&list=PLGCTGpvdT04Re5yrxKOVg1yjuoILLGDwZ&src_vid=JpJrsIWUxM&v=qWtM5c-X0gM

How To True a Bike Wheel

<https://www.youtube.com/watch?v=jlneyABUIM0>

How to Replace Brake Pads on a Bike

<https://www.youtube.com/watch?v=JpJrsIWUxM>

Bicycle Rim Brake Identification - What Type of Brake Do I Have?

https://www.youtube.com/watch?annotation_id=annotation_949099399&feature=iv&index=7&list=PLGCTGpvdT04Re5yrxKOVg1yjuoILLGDwZ&src_vid=XMa9UqY9obk&v=j6ANuieQR4w

Brake Caliper Mounting & Adjustment - Linear Pull & V Brake

<https://www.youtube.com/watch?v=XMa9UqY9obk>

Lesson 3: Cables/Shifting

Replacing Cable Housing For Index Shifter

<https://www.youtube.com/watch?v=77Ay2m5WhO8>

How to Set Limit Screws On Rear Derailleur

<https://www.youtube.com/watch?v=Q70vEfsI2UA>

How to Adjust Front Derailleur

<https://www.youtube.com/watch?v=vLQk29enhRQ>