Bicycle Mechanics and Repair Decal
Mechanical Engineering 98/198
Spring 11

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About Citizen Cycle

We are a collection of individuals united by a common interest in biking and a desire to create a healthier, greener, and more vibrant community.
Learning Objectives

**Safety**
- Helmet use
- Theft Prevention
- Riding at night
- Defensive Riding
- Preventative Maintenance

**Bike Mechanics**
- Basic repair on the road
- Regular upkeep
- Advanced diagnosing and repair on all components of a bicycle

**Outreach**
- Learn and teach others
- Explore ways to help the cycling community at Cal and in the Bay Area
About the Class

• 1 hr. lecture per week
  – Students will learn the theory behind the basics of bicycle repair and get hands on experience on all components.

• 1 hr. of field study every other week.
  – Students will practice and improve their repair skills at Bike Day, a campus outreach event designed to help other students with their bicycle problems.

• 1 page paper due at end of semester.
Field Study
Attendance and Grading

• 2 absences allowed without make-up
• Absences beyond 2 must be made up at Bike Day
• Maximum of 4 absences total

• Grading will be based on attendance and a short paper to be assigned towards the end of the semester
Textbooks
Not required but a great resource

Park Tool Big Blue Book of Bicycle Repair

Bicycling Magazine's Complete Guide to Bicycle Maintenance and Repair: For Road and Mountain Bikes
Resources Available Online

www.bicycletutor.com

www.parktool.com/blog/repair-help

www.bikewebsite.com

www.sheldonbrown.com
Bicycle Safety – Preventative Maintenance

Regularly check your bike to ensure proper working order. This includes:

– Tightening and aligning brakes
– Tuning front and rear derailleurs
– Lubing the chain
– Proper cable tension
– Tightening bolts (esp. for you fixie riders)
– Inflating your tires
Helmets

• Don’t wear a hat under your helmet
• Don’t wear headphones while riding

Bicycle Deaths by Helmet Use

<table>
<thead>
<tr>
<th>Year</th>
<th>No Helmet</th>
<th>Helmet</th>
<th>Total* Num</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>602 (83%)</td>
<td>87 (12%)</td>
<td>722</td>
</tr>
<tr>
<td>2005</td>
<td>676 (86%)</td>
<td>77 (10%)</td>
<td>784</td>
</tr>
<tr>
<td>2006</td>
<td>730 (95%)</td>
<td>37 (5%)</td>
<td>669</td>
</tr>
<tr>
<td>2007</td>
<td>646 (92%)</td>
<td>50 (7%)</td>
<td>699</td>
</tr>
<tr>
<td>2008</td>
<td>653 (91%)</td>
<td>58 (8%)</td>
<td>714</td>
</tr>
</tbody>
</table>

Helmets are important for riders of all ages, especially because 86 percent of bicycle deaths are persons 16 and older.

Statistics from the Insurance Institute for Highway Safety Fatality Facts: Bicycles - 2008

Do you know the correct way to wear a helmet?

http://www.cpsc.gov/kids/kidsafety/correct.html

Wear the helmet flat atop your head, not tilted back at an angle.

Make sure the helmet fits snugly and does not obstruct your field of vision. Make sure the chin strap fits securely and that the buckle stays fastened.
Demo!

Don’t Thump Your Melon.
Defensive Riding
Safer Riding

http://bicyclesafe.com/
And the DMV says...

Street Legal Vehicle!
Front and Rear Lights
Cateye
Planet Bike
Reflectors

http://dmv.ca.gov/pubs/hdbk/shr_slow_veh.htm#bike
http://city.milwaukee.gov/SafeBiking3729.htm
Theft Prevention
Some General Rules

• ALWAYS LOCK YOUR BIKE!

• Gone for 1 minute? Lock it.
• Park in visible spots with heavy pedestrian traffic.

What Do I Need?

THE U-LOCK + THE CABLE

• Having a cheap bike helps. Breaking the lock might cost more than the bike itself.

The Proper Way

U-lock secures the frame and front wheel to the post.

Cable lock provides an additional lock to the frame and front wheel. Also can lock back wheel and seat post.

Sheldon Brown Method

http://technology.open.ac.uk/oubug/commuting/comm-gen.htm
The Bike Tree
Buying a Bike On Craigslist

Choosing a good bike from an ocean of crappy bikes:

• It’s all about the fit
• Do your research -- is it worth it?
• If it’s too good to be true, it probably is
• Objectively assess the condition of the bike
• Bring a knowledgeable friend

http://sfbay.craigslist.org/eby/bik/2176112017.html
http://sfbay.craigslist.org/sfc/bik/2175995496.html
http://sfbay.craigslist.org/nby/bik/2176040697.html
http://sfbay.craigslist.org/eby/bik/2176011434.html