# Schedule

A week-by-week breakdown of the material.

# Week 1 (09/04-9/08)

**Day 1** A taste of statistics<sup>1</sup>

Basic Terminology<sup>2</sup>

Data Collection<sup>3</sup>

HW1 (due Fri)<sup>4</sup>

**Day 2** Visualizing Variables<sup>5</sup>
Percentiles<sup>6</sup>
Quiz 1 due Sun<sup>7</sup>

**Day 3** Lab 1<sup>8</sup>

## Week 2 (09/11-09/15)

**Day 1** Measures of Center<sup>9</sup>

**Day 2** Measures of Spread<sup>10</sup>

**Day 3** Linear Transformations  $^{11}$  Lab  $2^{12}$ 

## Week 3 (09/18-09/22)

**Day 1** Density Curves<sup>13</sup>

The Normal Distribution<sup>14</sup>

<sup>&</sup>lt;sup>1</sup>notes/taste.html

<sup>&</sup>lt;sup>2</sup>notes/basic\_terminology.html

<sup>&</sup>lt;sup>3</sup>notes/data\_collection.html

<sup>&</sup>lt;sup>4</sup>assignments/hw1.html

<sup>&</sup>lt;sup>5</sup>notes/visualizing\_distributions.html

<sup>&</sup>lt;sup>6</sup>notes/percentiles.html

<sup>&</sup>lt;sup>7</sup>https://moodle.hanover.edu/mod/quiz/view.php?id=5177

<sup>8</sup>https://hanoverstatslabs.github.io/resources/labs/Lab1Instructions.html

<sup>&</sup>lt;sup>9</sup>notes/measures\_center.html

<sup>&</sup>lt;sup>10</sup>notes/measures\_spread.html

<sup>&</sup>lt;sup>11</sup>notes/linear\_transformations.html

<sup>&</sup>lt;sup>12</sup>labs/2.html

<sup>&</sup>lt;sup>13</sup>notes/density\_curves.html

<sup>&</sup>lt;sup>14</sup>notes/normal\_distribution.html

**Day 2** The Normal Distribution (cont)<sup>15</sup>

**Day 3** Lab 3<sup>16</sup>

## Week 4 (09/25-09/29)

**Day 1** Relationships between two variables<sup>17</sup> Scatterplots and Correlation<sup>18</sup>

**Day 2** General Theory on Modeling and Data Fitting<sup>19</sup>

**Day 3** Linear Models and Regression Lines<sup>20</sup> Lab 4<sup>21</sup>

## Week 5 (10/02-10/06)

**Day 1** The question of causation<sup>22</sup>

**Day 2 MIDTERM** (study guide<sup>23</sup>)

**Day 3** Introduction to Probability<sup>24</sup>

# Week 6 (10/09-10/13)

Day 1 Conditional Probability<sup>25</sup>

**Day 2** Probability rules<sup>26</sup>

#### **Day 3** Independent Events<sup>27</sup>

<sup>&</sup>lt;sup>15</sup>notes/normal distribution.html

<sup>&</sup>lt;sup>16</sup>labs/3.html

<sup>&</sup>lt;sup>17</sup>notes/relationships.html

<sup>&</sup>lt;sup>18</sup>notes/scatterplot correlation.html

<sup>&</sup>lt;sup>19</sup>notes/modeling\_general.html

<sup>&</sup>lt;sup>20</sup>notes/linear\_regression.html

<sup>&</sup>lt;sup>21</sup>labs/4.html

<sup>&</sup>lt;sup>22</sup>notes/correlation\_causation.html

<sup>&</sup>lt;sup>23</sup>notes/midterm1\_study\_guide.html

<sup>&</sup>lt;sup>24</sup>notes/probability\_intro.html

<sup>&</sup>lt;sup>25</sup>notes/probability\_conditional.html

<sup>&</sup>lt;sup>26</sup>notes/probability\_rules.html

<sup>&</sup>lt;sup>27</sup>notes/independent\_events.html

#### Week 7 (10/16-10/20)

- **Day 1** Tree Diagrams<sup>28</sup>
- **Day 2** Random Variables<sup>29</sup>
- **Day 3** The Binomial Setting and Distribution<sup>30</sup>

#### Week 8 (10/23-10/27)

- Day 1 Fall Break
- **Day 2** The Binomial Setting and Distribution<sup>31</sup>
- **Day 3** Lab: Work on Projects<sup>32</sup>

#### Week 9 (10/30-11/03)

- **Day 1** Mean and Standard Deviation of Random Variables<sup>33</sup>
- **Day 2** Work on Projects<sup>34</sup>
- **Day 3** Work on Projects<sup>35</sup>

## Week 10 (11/06-11/10)

- **Day 1** Combining Random Variables<sup>36</sup>
- Day 2 Mean and Standard Deviation of the Binomial<sup>37</sup>

# **Day 3 MIDTERM** (study guide<sup>38</sup>)

<sup>&</sup>lt;sup>28</sup>notes/decision trees.html

<sup>&</sup>lt;sup>29</sup>notes/random\_variables.html

<sup>&</sup>lt;sup>30</sup>notes/binomial.html

<sup>&</sup>lt;sup>31</sup>notes/binomial.html

<sup>&</sup>lt;sup>32</sup>labs/projectAnalysisSteps.html

<sup>&</sup>lt;sup>33</sup>notes/rv\_mean.html

<sup>&</sup>lt;sup>34</sup>labs/projectAnalysisSteps.html

<sup>&</sup>lt;sup>35</sup>labs/projectAnalysisSteps.html

<sup>&</sup>lt;sup>36</sup>notes/rv\_combine.html

<sup>&</sup>lt;sup>37</sup>notes/binomial\_mean.html

<sup>&</sup>lt;sup>38</sup>notes/midterm2\_study\_guide.html

#### Week 11 (11/13-11/17)

**Day 1** Binomial: Approximating by Normal<sup>39</sup>

Day 2 The Sample Mean / IID Setting<sup>40</sup>

**Day 3** The Sample Mean / IID Setting (cont)<sup>41</sup>

# Week 12 (11/20-11/24)

**Day 1** Inference I: Confidence Intervals<sup>42</sup>

Day 2 THANKSGIVING

Day 3 THANKSGIVING

#### Week 13 (11/27-12/01)

**Day 1** Inference I: Confidence Intervals (cont)<sup>43</sup>

**Day 2** Inference II: Hypothesis Tests<sup>44</sup>

**Day 3** Inference II: Hypothesis Tests (cont)<sup>45</sup>

# Week 14 (12/04-12/08)

Day 1 TBA

Day 2 TBA

**Day 3** Presentations

<sup>&</sup>lt;sup>39</sup>notes/binomial\_mean.html

<sup>&</sup>lt;sup>40</sup>notes/iid\_setting.html

<sup>&</sup>lt;sup>41</sup>notes/iid setting.html

<sup>&</sup>lt;sup>42</sup>notes/confidence intervals.html

<sup>&</sup>lt;sup>43</sup>notes/confidence intervals.html

<sup>&</sup>lt;sup>44</sup>notes/hypothesis\_tests.html

<sup>&</sup>lt;sup>45</sup>notes/hypothesis\_tests.html