## 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>
 HW1 due Fri<sup>3</sup>

 Day 2 Visualizing Variables<sup>4</sup>
 Quiz 1 due Sun<sup>5</sup>

**Day 3** Lab 1<sup>6</sup>

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

Day 1 Percentiles<sup>7</sup>

Measures of Center<sup>8</sup>

Measures of Spread<sup>9</sup>

HW2 due Fri<sup>10</sup>

Quiz 2 due Thu<sup>11</sup>

**Day 2** Data Collection<sup>12</sup>
Linear Transformations<sup>13</sup>

HW3 due Mon<sup>14</sup>

**Day 3** Lab 2<sup>15</sup>

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<sup>1</sup>notes/taste.html
<sup>2</sup>notes/basic_terminology.html
<sup>3</sup>assignments/hw1.html
<sup>4</sup>notes/visualizing_distributions.html
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<sup>&</sup>lt;sup>5</sup>https://moodle.hanover.edu/mod/quiz/view.php?id=5177

<sup>&</sup>lt;sup>6</sup>https://hanoverstatslabs.github.io/resources/labs/Lab1Instructions.html

<sup>&</sup>lt;sup>7</sup>notes/percentiles.html <sup>8</sup>notes/measures\_center.html

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

<sup>&</sup>lt;sup>10</sup>assignments/hw2.html

<sup>11</sup>https://moodle.hanover.edu/mod/quiz/view.php?id=5178

<sup>&</sup>lt;sup>12</sup>notes/data\_collection.html

<sup>&</sup>lt;sup>13</sup>notes/linear\_transformations.html

<sup>&</sup>lt;sup>14</sup>assignments/hw3.html

<sup>&</sup>lt;sup>15</sup>https://hanoverstatslabs.github.io/resources/labs/Lab2Instructions.html

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

**Day 1** Standardized scores<sup>16</sup>

**Day 2** Density Curves<sup>17</sup> HW4 due Wed<sup>18</sup>

**Day 3** Lab 3<sup>19</sup>

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

**Day 1** The Normal Distribution<sup>20</sup>

**Day 2** The Normal Distribution (cont)<sup>21</sup>

**Day 3** Lab 4<sup>22</sup>

HW5 due Fri<sup>23</sup>

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

**Day 1** Relationships between two variables<sup>24</sup> HW6 due Mon<sup>25</sup>

Day 2 MIDTERM (study guide<sup>26</sup>)

**Day 3** Lab  $5^{27}$ 

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

#### **Day 1** Scatterplots and Correlation<sup>28</sup>

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<sup>16</sup>notes/linear transformations.html
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<sup>&</sup>lt;sup>17</sup>notes/density\_curves.html

<sup>&</sup>lt;sup>18</sup>assignments/hw4.html

<sup>&</sup>lt;sup>19</sup>https://hanoverstatslabs.github.io/resources/labs/Lab3Instructions.html

<sup>&</sup>lt;sup>20</sup>notes/normal\_distribution.html

<sup>&</sup>lt;sup>21</sup>notes/normal\_distribution.html

<sup>&</sup>lt;sup>22</sup>https://hanoverstatslabs.github.io/resources/labs/Lab4Instructions.html

<sup>&</sup>lt;sup>23</sup>assignments/hw5.html

<sup>&</sup>lt;sup>24</sup>notes/relationships.html

<sup>&</sup>lt;sup>25</sup>assignments/hw6.html

<sup>&</sup>lt;sup>26</sup>notes/midterm1\_study\_guide.html

<sup>&</sup>lt;sup>27</sup>https://hanoverstatslabs.github.io/resources/labs/Lab5Instructions.html

<sup>&</sup>lt;sup>28</sup>notes/scatterplot\_correlation.html

**Day 2** General Theory on Modeling and Data Fitting<sup>29</sup>
Linear Models and Regression Lines<sup>30</sup>
HW7 due Mon<sup>31</sup>

**Day 3** Lab 6<sup>32</sup>

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

**Day 1** Linear Models and Regression Lines (cont)<sup>33</sup> The question of causation<sup>34</sup>

**Day 2** Introduction to Probability<sup>35</sup>
Conditional Probability<sup>36</sup>

**Day 3** Probability rules<sup>37</sup> Independent Events<sup>38</sup> Tree Diagrams<sup>39</sup>

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

Day 1 Fall Break

**Day 2** Random Variables<sup>40</sup>

**Day 3** Lab: Work on Projects<sup>41</sup>

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

**Day 1** The Binomial Setting and Distribution<sup>42</sup>

**Day 2** Mean and Standard Deviation of Random Variables<sup>43</sup>

<sup>&</sup>lt;sup>29</sup>notes/modeling\_general.html

<sup>&</sup>lt;sup>30</sup>notes/linear\_regression.html

<sup>&</sup>lt;sup>31</sup>assignments/hw7.html

<sup>&</sup>lt;sup>32</sup>https://hanoverstatslabs.github.io/resources/labs/Lab6Instructions.html

<sup>&</sup>lt;sup>33</sup>notes/linear\_regression.html

<sup>&</sup>lt;sup>34</sup>notes/correlation\_causation.html

<sup>&</sup>lt;sup>35</sup>notes/probability\_intro.html

<sup>&</sup>lt;sup>36</sup>notes/probability\_conditional.html

<sup>&</sup>lt;sup>37</sup>notes/probability\_rules.html

<sup>&</sup>lt;sup>38</sup>notes/independent\_events.html

<sup>&</sup>lt;sup>39</sup>notes/decision trees.html

<sup>&</sup>lt;sup>40</sup>notes/random variables.html

<sup>&</sup>lt;sup>41</sup>labs/projectAnalysisSteps.html

<sup>&</sup>lt;sup>42</sup>notes/binomial.html

<sup>&</sup>lt;sup>43</sup>notes/rv\_mean.html

#### **Day 3** Work on Projects<sup>44</sup>

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

- **Day 1** Combining Random Variables<sup>45</sup>
- **Day 2** Mean and Standard Deviation of the Binomial<sup>46</sup>
- **Day 3 MIDTERM** (study guide<sup>47</sup>)

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

- **Day 1** Binomial: Approximating by Normal<sup>48</sup>
- **Day 2** The Sample Mean / IID Setting<sup>49</sup>
- **Day 3** The Sample Mean / IID Setting (cont)<sup>50</sup>

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

- **Day 1** Inference I: Confidence Intervals<sup>51</sup>
- Day 2 THANKSGIVING
- Day 3 THANKSGIVING

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

- **Day 1** Inference I: Confidence Intervals (cont)<sup>52</sup>
- **Day 2** Inference II: Hypothesis Tests<sup>53</sup>

**Day 3** Inference II: Hypothesis Tests (cont)<sup>54</sup>

<sup>&</sup>lt;sup>44</sup>labs/projectAnalysisSteps.html

<sup>&</sup>lt;sup>45</sup>notes/rv combine.html

<sup>&</sup>lt;sup>46</sup>notes/binomial mean.html

<sup>&</sup>lt;sup>47</sup>notes/midterm2\_study\_guide.html

<sup>&</sup>lt;sup>48</sup>notes/binomial\_mean.html

<sup>&</sup>lt;sup>49</sup>notes/iid\_setting.html

<sup>&</sup>lt;sup>50</sup>notes/iid\_setting.html

<sup>&</sup>lt;sup>51</sup>notes/confidence intervals.html

<sup>&</sup>lt;sup>52</sup>notes/confidence\_intervals.html

<sup>&</sup>lt;sup>53</sup>notes/hypothesis\_tests.html

<sup>&</sup>lt;sup>54</sup>notes/hypothesis\_tests.html

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

Day 1 TBA

Day 2 TBA

Day 3 Presentations