

# Schedule

A week-by-week breakdown of the material.

IMPORTANT: This syllabus is revised daily as we move through the material. Notes more than 1 day in the future may be out of date.

## Week 1 (09/05-09/09)

- Day 1
  - Introduction, case studies<sup>1</sup>
  - Some Python fundamentals<sup>2</sup>
- Day 2
  - Data Formats<sup>3</sup>
- Day 3
  - Reading JSON from Python<sup>4</sup>
  - Assignment 1: Working with JSON data<sup>5</sup>

## Week 2 (09/12-09/16)

- Day 1
  - List Comprehensions<sup>6</sup>
  - Introduction to Web APIs and Web Services<sup>7</sup>
- Day 2
  - RESTful design<sup>8</sup>
- Day 3
  - RESTful design, case study<sup>9</sup>
  - Assignment 2: Working more with Twitter API<sup>10</sup>

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<sup>1</sup>[notes/intro.html](#)

<sup>2</sup>[notes/intro\\_python.html](#)

<sup>3</sup>[notes/data\\_formats.html](#)

<sup>4</sup>[notes/json\\_python.html](#)

<sup>5</sup>[assignments/1.html](#)

<sup>6</sup>[notes/list\\_comprehensions.html](#)

<sup>7</sup>[notes/web\\_apis.html](#)

<sup>8</sup>[notes/rest.html](#)

<sup>9</sup>[notes/rest\\_case\\_study.html](#)

<sup>10</sup>[assignments/2.html](#)

## Week 3 (09/19-09/23)

- Day 1
  - Introduction to databases<sup>11</sup>
  - Relational Databases<sup>12</sup>
- Day 2
  - Introduction to MySQL<sup>13</sup>
- Day 3
  - Joins, functions, updates and deletes<sup>14</sup>
  - Assignment 3: Working with MySQL database tables<sup>15</sup>

## Week 4 (09/26-09/30)

- Day 1
  - Accessing SQL from other languages<sup>16</sup>
- Day 2
  - Accessing SQL from other languages (cont)<sup>17</sup>
- Day 3
  - Web Frameworks, and Flask<sup>18</sup>
  - Assignment 4: Tweets via SQL queries and SQLAlchemy<sup>19</sup>

## Week 5 (10/03-10/07)

- Day 1
  - Guest lecture
- Day 2
  - Web Frameworks, and Flask (cont)<sup>20</sup>
- Day 3
  - Assignment 5: Implementing a simple messaging web service<sup>21</sup>

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<sup>11</sup>[notes/databases\\_intro.html](#)

<sup>12</sup>[notes/databases\\_relational.html](#)

<sup>13</sup>[notes/databases\\_mysql.html](#)

<sup>14</sup>[notes/databases\\_mysql.html](#)

<sup>15</sup>[assignments/3.html](#)

<sup>16</sup>[notes/databases\\_sqlalchemy.html](#)

<sup>17</sup>[notes/databases\\_sqlalchemy.html](#)

<sup>18</sup>[notes/databases\\_web\\_frameworks.html](#)

<sup>19</sup>[assignments/4.html](#)

<sup>20</sup>[notes/databases\\_web\\_frameworks.html](#)

<sup>21</sup>[assignments/5.html](#)

## Week 6 (10/10-10/14)

- Day 1
  - SQL Practice<sup>22</sup>
- Day 2
  - Midterm (study guide<sup>23</sup>)
- Day 3
  - Work on assignment 5

## Week 7 (10/17-10/21)

- Day 1
  - Fall Break
- Day 2
  - Indexes, Views, ORM<sup>24</sup>
- Day 3
  - Work on Assignment 5

## Week 8 (10/24-10/28)

- Day 1
  - Emergence of NoSQL databases<sup>25</sup>
  - NoSQL Data Models<sup>26</sup>
- Day 2
  - Lab work
- Day 3
  - Distributed Database Models<sup>27</sup>
  - Consistency<sup>28</sup>

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<sup>22</sup>[notes/sql\\_practice.html](#)

<sup>23</sup>[notes/midterm1\\_study\\_guide.html](#)

<sup>24</sup>[notes/sql\\_odds\\_ends.html](#)

<sup>25</sup>[notes/nosql\\_start.html](#)

<sup>26</sup>[notes/nosql\\_data\\_models.html](#)

<sup>27</sup>[notes/nosql\\_distributed.html](#)

<sup>28</sup>[notes/nosql\\_consistency.html](#)

## Week 9 (10/31-11/04)

- Day 1
  - Introduction to MongoDB<sup>29</sup>
- Day 2
  - Aggregation Framework in MongoDB<sup>30</sup>
- Day 3
  - More practice with aggregation

## Week 10 (11/07-11/11)

- Day 1
  - Assignment 6: More MongoDB practice<sup>31</sup>
- Day 2
  - Map-Reduce in general and in MongoDB<sup>32</sup>
- Day 3
  - Work on project

## Week 11 (11/14-11/18)

- Day 1
  - Case Study: Consumer Expenditure data<sup>33</sup>
- Day 2
  - Web Scraping<sup>34</sup>
- Day 3
  - Guest Lecture

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<sup>29</sup>[notes/mongodb.html](#)

<sup>30</sup>[notes/mongodb\\_aggregation.html](#)

<sup>31</sup>[assignments/6.html](#)

<sup>32</sup>[notes/mongodb\\_mapreduce.html](#)

<sup>33</sup>[notes/mongodb\\_practice.html](#)

<sup>34</sup>[notes/web\\_scraping.html](#)

## **Week 12 (11/21-11/25)**

- Day 1
  - Assignment 7: Web Scrapping practice<sup>35</sup>
- Day 2
  - Thanksgiving
- Day 3
  - Thanksgiving

## **Week 13 (11/28-12/02)**

- Day 1
  - Work on project
- Day 2
  - Work on project
- Day 3
  - Work on project

## **Week 14 (12/05-12/09)**

- Day 1
  - Security and Authentication<sup>36</sup>
- Day 2
  - Security and Authentication<sup>37</sup>
- Day 3
  - Final study guide<sup>38</sup>

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<sup>35</sup>[assignments/7.html](#)

<sup>36</sup>[notes/security\\_auth.html](#)

<sup>37</sup>[notes/security\\_auth.html](#)

<sup>38</sup>[notes/midterm2\\_study\\_guide.html](#)