## Schedule

A week-by-week breakdown of the material.

### Week 1 (01/11-01/15)

- Day 1 OCAML setup<sup>1</sup>
- **Day 2** OCAML basics<sup>2</sup> Evaluation model, basic types, bindings
- Day 3 Functions<sup>3</sup>
- **Day 4** Tuples, practice<sup>4</sup>

Assignment 1<sup>5</sup> due by class time, Friday, January 22nd.

### Week 2 (01/18-01/22)

- **Day 1** Lists and Option Types<sup>6</sup>
- **Day 2** Pattern-matching<sup>7</sup>
- Day 3 Recursion<sup>8</sup>
- **Day 4** State recursion<sup>9</sup>

Assignment  $2^{10}$  due by class time, Wed, January 27th.

# Week 3 (01/25-01/29)

- Day 1 Tail Calls<sup>11</sup>
- **Day 2** Style reviews.
- **Day 3** Recursion practice.
- Day 4 Assignment 2 style reviews. Recursion practice problems<sup>12</sup>

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

<sup>&</sup>lt;sup>2</sup>notes/ocaml basics.html

<sup>&</sup>lt;sup>3</sup>notes/ocaml functions.html

<sup>&</sup>lt;sup>4</sup>notes/ocaml functions.html

<sup>&</sup>lt;sup>5</sup>assignments/hw1.html

<sup>&</sup>lt;sup>6</sup>notes/lists\_options.html

<sup>&</sup>lt;sup>7</sup>notes/pattern\_matching.html

<sup>&</sup>lt;sup>8</sup>notes/recursion.html

<sup>&</sup>lt;sup>9</sup>notes/recursion\_state.html

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

<sup>&</sup>lt;sup>11</sup>notes/tail calls.html

<sup>&</sup>lt;sup>12</sup>notes/recursion\_state.html

### Week 4 (02/01-02/05)

**Day 1** Type aliases and Type variants<sup>13</sup>
Assignment 3<sup>14</sup> due by class time, Monday, February 8th.

**Day 2** Polymorphic Types<sup>15</sup>

**Day 3** Type inference 16

**Day 4** Anonymous Functions, Functions as values<sup>17</sup> Assignment 4<sup>18</sup> due Thursday, February 11th.

### Week 5 (02/08-02/12)

Day 1 Currying<sup>19</sup>

**Day 2** Exceptions and exception handling<sup>20</sup>
Assignment 5<sup>21</sup> due Wednesday, February 17th.

Day 3 Sick day

Day 4 Sick day

## Week 6 (02/15-02/19)

**Day 1** Higher order functions<sup>22</sup>
Assignment 6<sup>23</sup> due Monday, February 22nd.

**Day 2** List functions<sup>24</sup>

**Day 3** Introduction to Modules<sup>25</sup>
Assignment 7<sup>26</sup> due Friday, February 26th.

## **Day 4** References and mutation<sup>27</sup>

13 notes/type\_variants.html
14 assignments/hw3.html
15 notes/types\_polymorphic.html
16 notes/type\_inference.html
17 notes/functions\_anonymous.html
18 assignments/hw4.html
19 notes/currying.html
20 notes/exceptions.html
21 assignments/hw5.html
22 notes/functions\_higher\_order.html
23 assignments/hw6.html
24 notes/functions\_list.html

<sup>25</sup>notes/modules.html

<sup>26</sup>assignments/hw7.html <sup>27</sup>notes/references.html

#### Week 7 (02/22-02/26)

- Day 1 Sick Day
- **Day 2** Delayed Evaluation<sup>28</sup>
- **Day 3** Records and Objects<sup>29</sup>
- **Day 4** Building an Interpreter<sup>30</sup>

Assignment 8<sup>31</sup> due Monday, March 14th.

#### Week 8 (02/29-03/04)

**BREAK** 

## Week 9 (03/07-03/11)

- **Day 1** Introduction to Racket<sup>32</sup>
- Day 2 MIDTERM (study guide<sup>33</sup>)
- **Day 3** Introduction to Racket (cont)<sup>34</sup>
- **Day 4** Bindings and Mutation in Racket<sup>35</sup>

### Week 10 (03/14-03/18)

Day 1 Macros<sup>36</sup>

Dynamic Datatype-Programming via pairs<sup>37</sup> Assignment 9<sup>38</sup> due Monday, March 21st.

- Day 2 Guest lecture
- **Day 3** Dynamic Datatype-Programming via structs<sup>39</sup>

**Day 4** Mutation in the Interpreter: The need for a store<sup>40</sup>

<sup>&</sup>lt;sup>28</sup>notes/delayed\_eval.html

<sup>&</sup>lt;sup>29</sup>notes/records\_objects.html

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

<sup>&</sup>lt;sup>31</sup>assignments/hw8.html

<sup>&</sup>lt;sup>32</sup>notes/racket\_intro.html

<sup>&</sup>lt;sup>33</sup>notes/midterm\_study\_guide.html

<sup>&</sup>lt;sup>34</sup>notes/racket\_intro.html

<sup>&</sup>lt;sup>35</sup>notes/racket\_bindings\_mutation.html

<sup>&</sup>lt;sup>36</sup>notes/racket\_macros.html

<sup>&</sup>lt;sup>37</sup>notes/racket\_datatypes.html

<sup>&</sup>lt;sup>38</sup>assignments/hw9.html

<sup>&</sup>lt;sup>39</sup>notes/racket datatypes.html

<sup>&</sup>lt;sup>40</sup>notes/interp mutation.html

## Week 11 (03/21-03/25)

- **Day 1** Mutation in the Interpreter: The need for a store<sup>41</sup> Assignment 10<sup>42</sup> due Friday, April 1st.
- **Day 2** Mutation in the Interpreter: The need for a store<sup>43</sup>
- **Day 3** Static Type-Checking vs Dynamic checking<sup>44</sup>
- Day 4 Interpreting objects and classes

## Week 12 (03/28-04/01)

- **Day 1** Type-checking in the interpreter
- Day 2 Continuations and their uses
- Day 3 Continuation-passing style
- Day 4 TBA

#### Week 13 (04/04-04/08)

- Day 1 TBA
- Day 2 TBA
- Day 3 TBA
- Day 4 TBA

## Week 14 (04/11-04/15)

- Day 1 TBA
- Day 2 TBA
- Day 3 TBA
- Day 4 TBA

<sup>&</sup>lt;sup>41</sup>notes/interp\_mutation.html

<sup>&</sup>lt;sup>42</sup>assignments/hw10.html

<sup>&</sup>lt;sup>43</sup>notes/interp\_mutation.html

<sup>&</sup>lt;sup>44</sup>notes/static\_vs\_dynamic.html