

**Department of Computer Science
University of Massachusetts Lowell
COMP.3040 Foundations of Computer Science
Fall 2019**

**Homework 4 [9%]
Handed out: 11/03/2019
Due on 11/24/2019**

Homework #4– Chapter 3” Turing Machines

Do the following problems from Chapter 3 of the Text

3.1: a, c, d
plus
00000000

3.2: b, c, d, e,
plus
10110#10110
01100#01101

3.8: b, c
plus
Draw the state diagram for Turing Machines 3.8b and 3.8c
For these machines draw the configurations for
3.8b:

010100
010101

3.8c:
000111
000110

Modify machine M2 to recognize odd number of 0s and draw the state diagram. Draw the configuration for

000
0000

Modify machine M2 to recognize even number of 0s and draw the state diagram. Draw the configuration for

000
0000

Deliverables

- **Only latex files will be accepted—no hand written submissions please**
- **pdf must also be submitted**
- Create a directory `firstname.lastname/hwn` where `n` is the homework number and store all the files in this directory. Tar this directory and submit it [you need to tar it such that `untar` will preserve your full path]

Extra Credit

- any other – please document

Deadline and Late Submissions

- The assignment is due on the date specified above at 11:59:59 PM
- Each day late will incur a penalty of 10% of the grade for the assignment; for example, if the assignment is 3 days late, the maximum grade will be 85 out of 100—15 will be subtracted from whatever grade is assigned.