# CMPS 4553/5993 Topics: Computational Methods

# Study Guide Test 1

**Read/Study**

Data Science Essentials Chapters 1- 5,

CSE paper

Slides, especially on natural computing

Homework assignments

Project 1

Last Thursday’s in-class work

**Format:**

Multiple choice

Fill-in blank

Tracing code

Computing mean of a list of numbers

Writing code snippets

**Concepts:**

computational science

data science

scientific computing

simulation

modeling

data acquisition

data analysis sequence

6 types of analysis

raw data

bad/good data

data representations

report structure

HTML vs XML

built-in string functions

for each loop

counters

CSV, HTML, XML, JSON

Delimiter

regular expression

module re

globbing

pickling/unpickling

NLTK

NUMPY

list comprehension

lists vs arrays vs sets

dictionaries

Beautiful Soup

tuple

strings/string processing

split

lower/upper

indexing and slicing

finding index of column by

name

zip

ufuncs

statistics module

numpy mean, std

aggregate analysis

mean

standard deviation

stemming

normalization – 5 steps

lemmatization

opening text files, web

pages and csv files

reading/writing files

closing files

serializable objects

stopwords

wordnet

corpus