# CSC3320 System Level Programming
# Lab Assignment 4 - Part 1 (In- Lab)
## Instructor: Fil Rondel

**Purpose**: Practices on the grep family commands to process texts in files.

Note: Please follow the instructions below, and write a **report by answering the questions** and upload the report (named as **Lab4_P1_FirstNameLastName**.pdf or Lab4_P1_FirstNameLastName.doc) to Google Classroom.

**Please add the lab assignment NUMBER and your NAME at the top of your file sheet.**

Open your terminal and connect to snowball server. Change your directory to your home directory (**cd ~** ), and then create a new directory named as "Lab4" (**mkdir Lab4**). After that, go to directory Lab4 (**cd Lab4**) and please download the file "CSC_Course.txt" by the following command (internet access required):

```
cp      /home/frondel/Public/CSC_Course.txt      CSC_Course.txt
```

Be sure it succeeds using "**ls**" to see the file name "CSC_Course.txt" listed.

Try the following commands step by step and finish the required tasks from step 4) to step 16).

**Note: marks a single space.**

1) `$more  CSC_Course.txt`

   Check the content of "CSC_Course.txt" using **more.**

   Note: When viewing the file, you may need to use command **f** (forward one screen), **b** (backward one screen) and **q**(quit).

2) `$grep 'CSC 3320' CSC_Course.txt`

   `Note: there is a single space between "CSC" and "3320"`

   Output the lines containing the string "CSC 3320"(search the course the number of which is "CSC 3320")

3) `$grep -i 'CSC 3320' CSC_Course.txt`

   Output the lines containing the string "CSC 3320" via ignoring case (search the information related to CSC3320)

4) `$ grep 'CSC 3' CSC_Course.txt`

   Attach a screenshot of the output and describe what this command does.

5) `$ grep 'CSC 3|CSC 1' CSC_Course.txt`

Attach a screenshot of the output and describe what this command does.

6) `$ grep -E 'CSC 3|CSC 1' CSC_Course.txt`

Attach a screenshot of the output and describe what this command does.

**Use extend regular expression**

7) `$ egrep 'CSC 3|CSC 1' CSC_Course.txt`

Attach a screenshot of the output and describe what this command does.

8) `$ fgrep '3.000 Credit hours' CSC_Course.txt`

Attach a screenshot of the output and describe what this command does.

9) `$ fgrep -x '3.000 Credit hours' CSC_Course.txt`

Attach a screenshot of the output and describe what this command does.

**Only match the whole line**

10) `$ grep 'CSC.*Programming' CSC_Course.txt`

Attach a screenshot of the output and describe what this command does.

11) `$ grep '^CSC.*Programming$' CSC_Course.txt`

Attach a screenshot of the output and describe what this command does.

12) `$ grep --color 'CSC[^3]*3{2}' CSC_Course.txt`

Attach a screenshot of the output and describe what this command does.

**No result, {} is not a special character**

13) `$ egrep --color -w 'CSC[^3]*3{2}[^3]*' CSC_Course.txt`

Attach a screenshot of the output and describe what this command does.

**-w Select only those lines containing matches that form whole words.**

14) `$ grep 'CSC.*C++' CSC_Course.txt`

Attach a screenshot of the output and describe what this command does.

**+ is not a special character in basic regular expression**

15) `$ egrep 'CSC.*C\+\+' CSC_Course.txt`

Attach a screenshot of the output and describe what this command does.

**Convert +**

16) `$ egrep 'CSC.*C++' CSC_Course.txt`

Please only describe what this command does.

## Optional Part:

1) `$ sed -E -n 's/(CSC 3[0-9]{3})(.*)/\1/p' CSC_Course.txt`

Attach a screenshot of the output and describe what this command does.

2) `$ awk -F'-' '/(CSC 3[0-9]{3})(.*)/{print $1}' CSC_Course.txt`

Attach a screenshot of the output and describe what this command does.

3) `$ sed -E -n 's/(CSC [0-9]{4})( - )(.*)/\3/p' CSC_Course.txt`

Attach a screenshot of the output and describe what this command does.

4) `$ sed -E -n 's/(CSC [0-9]{4})( - )(.*)/\3/p' CSC_Course.txt| sort`

Attach a screenshot of the output and describe what this command does.