**ECON 3341  
Labour Economics**

Submit a PDF copy of your written answers to me before midnight Halifax time on the due date. This assignment is worth 15 marks but will be graded out of 50 points. Read the information carefully.

**Part 1: Accessing Statistics Canada Data Tables (total 25 points)**

Statistics Canada maintains an open-access time series database. You can find it by going to Statistics Canada’s main page (<https://www.statcan.gc.ca/eng/start> ) and clicking on the ‘Data’ tab near the top of the page. The database contains Canadian data on a wide variety of economic variables including prices, national accounts, financial data and labour data. The data is presented in table format and there are options to customize the tables. You can save the data in worksheet and other formats.

You need to retrieve data on two variables **(5 points)**:

* Consumer Price Index (CPI) for All-items, monthly, not seasonally adjusted, Canada as a whole and a Canadian province of your choice for January 2001-August 2020;
* Average Hourly Earnings for Employees Paid by the Hour, including overtime and unadjusted for seasonal variation. The data is available for several industries and by province: you want data for the “industrial aggregate excluding unclassified businesses” for Canada as a whole and a Canadian province of your choice for the period January 2001-August 2020.

Finding and saving the data:

- Once you are on the Statistic Canada site and have clicked on the Data tab you will see that there are a couple of search options:

1. you can type a name in the keyword box and see if you can locate the data, e.g. you could try (entering: ‘Consumer Price Index Monthly’ when looking for the price index data). The keyword search option on the current version of the website seems to work quite well but can go awry if you don’t know the exact series you are looking for. Other keyword options are to use the relevant table number should you happen to know it (you may know this if you are updating figures from a source that cited a specific table);
2. or (2) you can also browse by subject or source dataset. To implement the second method ‘click’ the subject area in list on the left side of the Data page that seems most closely related to the type of data you are looking for e.g. choose “Prices and Price Indexes” when looking for the Consumer Price Index; “Labour” when looking for the Average Hourly Earnings data. Then look through the resulting list of folders or tables for that subject category; click on what seems to be the most appropriate option e.g. you might find "Consumer Price Indexes" for the Consumer Price Index and "Earnings, Wages and non-wage benefits " for Average Hourly Earnings. You will then be given a list of Table titles. Read the titles of the tables and click on the table number that seems most likely to have what you are looking for and see what it contains.

- After clicking the Table number you are given the default version of the relevant Data table. **This is typically not what quite you want!** To customize the table click the "Add/Remove data" tab. This will give you a set of options that allows you to specify the precise data series you want to retrieve**. Let’s look at the particular variables you need for this question**.

1) take the Consumer Price Index (CPI) series. You want the table containing monthly data. Click the table number and then under the “Add/remove data” tab choose the appropriate options, i.e. choose Canada under Geography, choose “All-items” as the indicated Product group. Also set the “Reference Period” to the appropriate years (January 2001-August 2020). If you wish you can also change the Layout of the display format (I like to have the ‘Reference period’ as rows). Once you have indicated exactly what you want you can click "Apply" and an "html" version of the results table will be displayed. You can cut and paste the data from this table or click "Download" which will give you a page that allows you to save the table in spreadsheet format (CSV). You can open the saved file with Excel.

2) now take the Average Hourly Earnings series. Find the table entitled: “Average hourly earnings for employees paid by the hour, by industry, monthly, unadjusted for seasonality.’ This contains data from the Survey of Employment, Payrolls and Hours (SEPH).

Retrieve average hourly earnings series indicated above following the same steps as used to obtain the CPI data, i.e. use ‘Add/Remove Data’ to customize your search. Make sure to select Canadian data for the “industrial aggregate excluding unclassified businesses” and make sure that the series includes overtime. Also specify the appropriate time periods for each table. Before you leave this table also answer part (c) of this question.

* Use the data in you retrieved (CPI & Average Hourly Earnings) to calculate the real wage in August 2020 dollars (i.e. make August 2020 your base year). Report the wage data in nominal terms and your real wage series in a table and a graph. What has been happening to real hourly wages between January 2001 and August 2020? **(10 points)**
* Go back to the Average Hourly Earnings table on the Statistics Canada site and set the NAICS Industry to ‘All’, choose your reference period as August 2020 only and then click ‘Apply’. This will give you wage data for a detailed list of industries (you can get even more detail by clicking the boxes to the right of the ‘All box’. Scan through the wage data for August 2020. Which industries paid the highest wages? Which paid the lowest wages? How much did these industries pay? **(10 points)**

**Part 2:** **Labour Force Survey Questionnaire and survey methods (total 25 points)**

The Labour Force Survey (LFS) is Canada’s main source of monthly data on labour market outcomes including the level of employment, the unemployment rate and wage levels. Most other national statistical agencies have a similar survey e.g. the Current Population Survey in the United States.

The *Guide to the Labour Force Survey* (see attached in the course website) discusses the survey methods and basic definitions. To get some idea of where the data is coming from you can look at the Labour Force Survey questionnaire (it starts on page 50 of the *Guide to the Labour Force Survey*) The survey collects information on personal characteristics (age, sex, education, etc. – see pp. 52-54 and labour force information (see p. 55 starting with Question 100). If the person is working in the survey week, a number of questions are asked about their job and working conditions. If the person is not working during the survey week questions are asked that aim to determine if the person is unemployed or not in the labour force. Go through the questionnaire and get a feel for the types of information the survey collects. Based on the questionnaire answer the following questions:

* 1. Say that a person is employed during the survey week. Provide a list of job characteristics and working conditions that the survey collects data on (be sure to give the numbers of the questions that collect the information as part of your answer). See especially pp. 56-60 of the Guide. **(5 points)**
* 2. Go to Section 2 of the Guide. This section discusses labour force status.   
  (i) People surveyed can be classified into three labour force states. What are they?   
  (ii) A particularly difficult state to measure in practice is unemployment. What three groups of people are classified as unemployed?   
  (iii) Have a look at Figure 2.1 which shows the questions and responses to the questions used to classify people into each labour force state. Based on the Figure summarize the paths (sequence of responses to questions) by which someone might end up categorized as unemployed.   
  (iv) The LFS definition of unemployed status in (ii) is quite standard but it is often argued that it leaves out some people who are probably unemployed. Suggest people who you might classify as unemployed but who would not be so classified by Statistics Canada. **(10 points)**
* Go to Section 4 of the Guide (starts p.18). The section deals with Survey Methodology.   
  (i) Section 4 claims that: “The LFS plays a central role in the national statistical system in several ways”. Summarize the three key roles it plays.   
  (ii) What groups are excluded from the survey?   
  (iii) The documentation notes that LFS follows a “rotating panel sample design”. What does this mean?   
  (iv) Because the LFS is not a random sample of the population a “weight” variable is included (see Section 6). What is the role of this weight variable? What would a weight of 50 mean? **(10 points)**