Objectives:

- To understand the determinants of the long-run average rate of unemployment, or the **natural rate of unemployment**;

- To understand the types of long-run unemployment, the reasons for their existence, and the factors determining their level;

I. Definition/Measurement of Unemployment. (Note: this is from chapter 2, section 2-3.)

- The level of unemployment is estimated each month using the **Labour Force Survey** - a survey of a representative sample of 56,000 Canadian households.

- Each adult (15 years and older) in a responding household is classified as:

  – ***Employed*** [E] - currently has paid employment [whether FT or PT]

  or

  – ***Unemployed*** [U]- currently has **no** paid employment but :
    - is **available** for work;

    and

    - has **looked** for work in last 4 weeks.

  or

  – ***NOT in the labour force*** - currently neither employed or unemployed under the above definitions.

II. Key relationships and ratios 2008

- Total population = Population of working age + Population not of working age
  (15 and over) (Less than 15)
  2008: 33.2 = 26.92m + 6.3m

- Population of working age = Labour force + Not in Labour force
  2008: 26.92m = 18.25m + 8.67m

- Labour force (L): = Employment (E) + Unemployment (U)
  2008: = 17.13m + 1.12m

- Unemployment rate: $u = U/L \cdot 100\%$
  2008: $u = (1.12/18.25) = 6.1\%$

- Labour force participation rate: $l = L/POP(aged\ 15\ \&\ over)\cdot 100\%$
  2008: $l = (18.26/26.92) = 67.8\%$

III. Problems with the "official" measure of unemployment:

- discouraged workers - those who have given up looking for work (including them in *u* would increase *u* by about 1.0 percentage point)
- involuntary part-time unemployment (taking account of involuntary part-time unemployment would add about 1.0 percentage point to *u*)
- but: those who claim they have looked for work but did not.

IV. Trends in labour force participation in Canada.

- Just after WWII, only one-third of Canadian women of working age were employed or looking for work while seven-eights of working age men (88%) were in the labour force; in 2005 62 percent of women were in the labour force in contrast to 73 percent of men.
- The decline in the male labour force participation rate may be explained by the fact that men now tend to: stay longer in school; retire earlier; and some stay at home to raise children.
- Many economists forecast a decline in labour force participation rates for both men and women over the next several decades.

V. <u>Canadian unemployment - The evidence of six decades</u>.

Data from 1950 to 2010 show

- In every year the unemployment rate [u] has exceeded 2%;
- Unemployment rate fluctuates in the short-run over the business cycle;
- From 1950 to the 1990s, there was a long-run upward trend in u;
- In this decade the average rate of unemployment had fallen to its level in the 1970s.

DECADE	**APPROXIMATE AVERAGE UNEMPLOYMENT RATE [*u*]**
1950s	4%
1960s	5%
1970s	7%

DECADE	**APPROXIMATE AVERAGE UNEMPLOYMENT RATE [*u*]**
1980s	9%
1990s	10%
2000s	7%

VI. The Natural Rate of Unemployment:

Def 1: ***The natural rate of unemployment* [*u**] *is the average level around which the measured rate of unemployment* [*u*] *fluctuates.***

- Mankiw and Scarth estimate *u** in a given year by averaging it over a span of 20 years, from 10 years earlier than the given year to 10 years later.

- Increases until 1990, falls subsequently (Fig. 6-1)

1. A Simple Model of Natural Rate of *u.*

Def 2: *u* is the rate which is constant in the absence of shocks*.

Define:

s = rate of job separation, or the (constant) fraction of the number of employed persons (E) who lose, or quit, their job in a given month.

f = rate of job finding, or the (constant) fraction of the number of unemployed persons (U) who find a job in a given month.

We have*:*

- total flow **out of** unemployment each month = *fU*
- total flow into unemployment each month = *sE*

There is no change in unemployment if:

$$fU = sE$$

Since *E = (L - U):*

$$fU/L = s(1-U/L)$$

Solving for *U/L*:

$$u^* = U/L = s/(s+f)$$

Conclusion: the natural rate of unemployment depends on job separation rate and on job finding rate

The natural rate of unemployment is lower if

- **The job finding rate is higher**
- **The job separation rate is lower,**

Numerical example: $s = 0.02$; $f=0.2$ $u^*=0.091$ or 9.1%

VII. Types of Unemployment and their Causes.

1. Job Search and Frictional Unemployment.

Def: ***Frictional u - unemployment caused by the time it takes workers to find a job.***

(a) **where it comes from - *employment turnover*:**

- **sectoral shifts** or shifting demands for labour across:
  - industries
  - regions
- **technological change** which reduces demand for certain types of labour;
- **business** failure;
- **individual worker** factors**:**
  - job dissatisfaction [quit]
  - poor job performance [firing]
  - geographical mobility of workers.

(b) **why it lasts**:

Job search ***takes time*** because:

- workers and jobs are **not identical**;
- **information is imperfect** about job vacancies and job seekers;
- there is **geographic immobility** of workers, at least in the short run;

(c) **Public policies and frictional unemployment**:

Policies which reduce frictional unemployment:

- govt. **employment agencies** which provide info. about job vacancies
- govt.-funded **retraining programs**

Policies which increase frictional unemployment:

- **Employment insurance** [EI] program [previously called *unemployment* insurance or UI] raises the rate of frictional unemployment by:
  (i) **lowering the rate of job finding**
  - reduces the cost of long job search.
  (ii) **increasing the rate of job separations**
  - easier to accept job loss;
  - employers use layoffs more often.

(d) **Evidence on EI and unemployment**

- According to Canadian evidence, the probability of an unemployed worker finding a job increases as the worker nears the end of the period of eligibility for EI benefits;

- An experiment in Illinois in 1985 showed that offering a bonus [$500] to unemployed workers if they found work within 11 wks. lowered the average duration of unemployment from 18.3 to 17 wks;.

- Study by Benjamin and Kochin on unemployment in UK between WW I and WW II
  - increases in UI benefits coincided with increases in unemployment rate;
  - teenagers ineligible for UI had lower rate of unemployment
- unemployment rate for married women dropped significantly relative to that of men after their UI benefits were cut in 1932.

2. Real-Wage Rigidity and Structural Unemployment.

(a) **real wage rigidity** - failure of wages to adjust until labour demand equals labour supply- leads to job rationing.

(b) The unemployment arising from real wage rigidity and job rationing is called ***structural unemployment*** **-** unemployment due to a fundamental mismatch between demand and supply of labour.

(c) Reasons for real wage rigidity:

(i) **Minimum wage** laws
- Has greatest impact on teenage unemployment; studies have shown that a 10% increase in minimum wage reduces teenage employment by 1-3%

- Other evidence:
1985: Man, Sask had the highest minimum wages in Canada, Alberta, BC - lowest.
Ratio of youth to adult unemployment:
2.9 - Manitoba
2.6 - Saskatchewan
1.9 - BC
1.8 - Alberta

- Many economists believe that **refundable income tax credits** are a better way to increase the incomes of the working poor; in comparison to the minimum wage, refundable income tax credits don't raise labour costs to firms and, hence, don't reduce employment.

(ii) **Unions** - " insiders and outsiders"

- raise wages above market clearing through collective bargaining;
- raise wages at nonunionized firms (to ward off unionization).

(iii) **Efficiency wages**

Idea: higher wages make workers more productive

Reasons: higher wages lead to:
- lower turnover
- higher effort
- higher average quality of workers
- better nutrition.

VIII. <u>Patterns of Unemployment in Canada:</u>

(a) Incidence and Duration

- The rate of unemployment is the product of two factors the ***incidence*** of unemployment (the likelihood than an individual worker will experience a spell of unemployment) and the ***duration*** of unemployment (the average length of an unemployment spell).
- In 2005 the incidence of unemployment was 2.6 percent (the average worker had a 2.6 percent chance of becoming unemployed in any given month in 2005) and the duration was

16 weeks (on average a spell of unemployment lasted 4 months).
An increase in the unemployment rate is associated with an increase in both the incidence and the duration of unemployment.
Earlier evidence: about 2/3 of the increase in unemployment rate is due to an increase in duration and about 1/3 is due to an increase in incidence.
A new study: mostly changes in incidence; the duration is fairly constant at 2.3 months

$ (b) **Age** distribution in 2007 - Table 6-2.

15-19	14.8%
20-24	8.7%
25-54	5.1%
55+	4.8%

(c) **Geographical (Provincial)** distribution in 2006:

N.L. - 14.8%	N.S. - 7.9%	QUE - 8.0%	MAN - 4.3%	ALTA - 3.4%
P.E.I. - 11.0%	N.B. - 8.8%	ONT - 6.3%	SASK - 4.7%	B.C. - 4.8%

(d) Explaining the **upward drift** in *u* from 1950s to 1990s

- **changing composition**: more young workers, women; but can't explain the upward drift in prime-age male unemployment (from below 3% in '50s to 9% in the '90s); also some of demographic changes of the 1970s have been reversed.

- **faster sectoral shifts** due to
  - increased pace of technological change;
  - more volatile natural resource prices (particularly oil prices);

- **skill-biased technical change** which in Canada (in contrast to the US) has meant lower employment rather than lower wages due to limited competitiveness of the Canadian economy.