BASIC PROCEDURE FOR RISK ASSESSMENT AND CONTROL (RAC)
FOR A PARTICULAR JOB
(These apply only to OHSE3740 – Assignment 1; examples are limited to one each, and are illustrative only)

1. Determine the ranges of likelihood and severity that would govern this job, from the lowest credible to the highest credible.
2. Divide the ranges of likelihood and severity into three distinct levels, defining each level in sufficient detail, without gaps or overlaps. The form given elsewhere shows three levels each, as per the suggestion by MOM for workplace accidents.

   Definitions of three levels may be as shown tabulated, with author's preference for simple designations. [Ignore the numbers shown.]

   You may have to expand the definitions to more specific detail, such as recognizable divisions of time, money, etc.

Likelihood	Description
Low = 1	Not very likely to occur
Medium = 2	Fairly likely, known to occur
High = 3	Common or repeating occurrence

Severity	Description
Low = 1 **[DON"T WORRY!]**	Verylittle injury, damage, or expense Quite acceptable as part of the job
Medium = 2 **[MANAGE IT!]**	Moderate injury, damage, or expense Unavoidable, but tolerable as part of job
High = 3 **[DON'T DO IT!]**	Major injuries, damage, or expense Definitely unacceptable as part of the job.

3. Start a RAC form for the job, of the format given elsewhere.

   Enter the job title. [E.g. Night shift at chemical factory]
4. Separate the job into job steps, each step corresponding to an activity, preferably in chronological order.

   Activity must have a verb. [E.g. Carrying chemical from warehouse to lab.]

   Attach a sketch of the job if possible, and if it would be useful in clarifying the activities.
5. For each activity, determine the associated hazard (or hazards).

   Consider various types of hazards (physical, environmental, chemical, mechanical, electrical, biological, ergonomic, etc.) Identify the hazards for each step under various types, with first two letters in capitals. [E.g. PH – Tripping and falling]
6. For each hazard, estimate the associated consequence (or consequences). Note that consequences for each hazard may also be evaluated under different heads (physical harm, property damage, environmental damage, time delay, reputation damage, direct financial loss). [E.g. PR – Breakage of bottle]
7. For each hazard, note the existing controls if for an ongoing project, or the safeguards required by regulations if for a new project. [E.g. – Adequate lighting]
8. For each <u>hazard</u>, estimate the likelihood (as frequency or probability) of the occurrence of the hazard qualitatively ('Low', 'Medium', 'High') considering the existing / required controls for likelihood in the assessment.
9. For each <u>consequence</u>, estimate the severity (as loss or other impact) of the consequence of the hazard qualitatively ('Low', 'Medium', 'High') considering the existing / required controls for severity in the assessment.
10. For each consequence, determine the risk level from the qualitative risk matrix, as 'Low', 'Medium', 'High') according to pre-defined categories of combinations of likelihood and severity); or,

    (b) Number-based (as the product of 1, 2, …, values of likelihood and severity, and then assigning qualitative categories to ranges of the product) the risk category. (This numerical assessment is ambiguously referred to as 'quantitative' assessment.)
11. Classify the risks into three main categories: (a) Acceptable, (b) Tolerable, and (c) Unacceptable.

(a) Acceptable: These are trivial and routine risks for the job, not requiring special time or funds. Conventional monitoring will be adequate to check that these risks do not worsen.

(c) Unacceptable: These are extreme and unusual risks for the job, beyond the resources or interests of the management. These risks must either be lowered into a manageable level, or transferred to another entity so that they do not obstruct the job from proceeding.

(b) Tolerable: These are the risks that remain beyond the acceptable risks and after the unacceptable risks are either reduced or removed.

These must be managed by appropriate additional controls. This middle category of tolerable risks may be subdivided into two or more categories for better control if the circumstances require and resources permit.

12. Recommend additional controls for each consequence, as per the conventional hierarchy:
    (i) Elimination,
    (ii) Substitution,
    (iii) Engineering controls,
    (iv) Administrative controls, and
    (v) Personal Protective Equipment.
13. Assign:
    (a) a staff member to implement the control, by name or designation, and
    (b) a tentative date, for the control must be completed.
14. Carry out the residual risk assessment after the additional controls, by steps 8. and 10., with the additional controls implemented.
15. Follow up with implementation, communication etc.