

Risk Assessment for the Project Laboratory

How to Complete your risk assessment

Written by

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For the project lab 6.12MPEB

What is a risk assessment ?

A risk assessment is a careful examination of anything in the workplace that could cause harm and a decision about whether there are enough precautions in place.

The factors that must be considered when carrying out an assessment are:

- 1 The process or work activity.
- 2 The environment where the work is carried out including unrelated activities going on in the area.
- 3 The people who are directly and indirectly affected.



What should the risk assessment cover?

The law states that a risk assessment must be 'suitable and sufficient' and that it should show:

- 1 Appropriate checks are made.
- 2 All who might be affected are accounted for.
- 3 Deal with all the obvious and significant Hazards while considering consequences and risks whilst taking into account all people directly and indirectly affected.
- 4 That all precautions and control measures are reasonable resulting in low risks.
- 5 You involve all people directly effected by the work in the assessment process.

The level of detail in a risk assessment should be proportionate to the risk and appropriate to the nature of the work.

Insignificant risks can usually be ignored, as can risks arising from routine activities associated with life in general, unless the work activity compounds or significantly alters those risks.

Your risk assessment should only include what you could reasonably be expected to know - you are not expected to anticipate unforeseeable risks; although some maybe be highlighted, proposed or questioned during the approval process.

2 Part Assessment

When faced with performing a risk assessment for the first time the experience can feel very daunting, frustrating and sometimes overwhelming. To help you complete the assessment it is best to split it into manageable parts.

Part 1 - Information Gathering

Things you need to know about your project/work to aid in the risk assessment.

Part 2 – Performing the risk assessment

Applying the information acquired from part 1 to the formal risk assessment.

Part 1. Information gathering

This section is all about finding out and collating some of the specific information about your project so that information is at hand when filling out the formal risk assessment. Think of this an informal ruff assessment before preforming the assessed risk assessment.

To do this split the work into 2 parts and those into smaller manageable sections.

A Background

A general overview of the work to be carried out.

B Activities

A list of tasks you need to perform to complete the work or project.



Part1-A. Information gathering. Project Background

This is all about the why, where, when and who. **Make notes** of the following points about your project or work.

When completing the formal risk assessment this part will help explain what your project is about, where and when it will be performed and who will be at risk.

1 **Project Title**

Be descriptive, include the course type and year of study, etc.

2 **Set Dates**

Set a date for the start and end of the project.

3 **Outline**

Describe your project in simple terms. i.e. What you intend to do, is it a group or individual project, who is the supervisor, where/when it will take place, note if you will be using any special equipment.

4 **Location**

Where will you be working Home\Campus\Field work; Note Building name\Floor number\Room or lab number, who manages the location, contacts for the location.

5 **Documentation**

Do you need to follow codes of practice, Are mandatory rules required, Location of documentation hardcopy/softcopy/online.

6 **Who**

Who will be effected by your project - Staff members/general public/visitors from industry, fellow students, yourself.



Part1-B. Information gathering. The Tasks and Hazards

This part is all about how you intend to conduct the work and perform the project/experiment. If you have not you done so you need to start thinking about what you are going to do. This part will help you fill out the activities section of the risk assessment process and get you thinking about the types of hazards i.e. equipment you might be using and how you would control any potential consequences.

Create a table as shown on page 9 and populate it with the following information relating to the project activities.

1 Tasks (Activities that you perform)
 Make a list of all the things you intend to do as part of your project i.e. Performing research, using computers to simulate things, building and testing circuits, connecting things to the body, using/mixing chemicals, etc.

2 Hazards (things you interact with)
 Any task or activity requires you to interact with a device, substance or object all of these things can cause harm. Make a note next to each task from above to list of all the hazards i.e. Using hand tools, using Laptop\computer, using a soldering iron, mixing epoxy resin, etc.

3 Consequences (When things to wrong)
 When interacting with a hazard you are putting yourself or others at risk of injury. Next to each hazard list all of the consequences that could happen should something go wrong i.e. water spillage, causing fire, physical injuries like cuts or bruises, getting electric shocks, etc.

4 Controls (How to control the task safely)
 How to stop, avoid or mitigate the consequence of your action. Controls need to be implemented to make hazards safe. Make a list of ways safely control the hazard. Use the control hierarchy on the next page to assist this part.

5 Risk level (The chance)
 The risk level is a measure of the likelihood of the consequence happening after safe control measures have been implemented. This is a calculated value based on the table shown. Try to aim for levels in Green and Yellow otherwise reassess the controls..

$$\text{Severity} \times \text{likelihood} = \text{Risk Level}$$

Severity = Level of injury Likelihood = Chance of injury

Severity	5. Catastrophic	5	10	15	20	25
	4. Major	4	8	12	16	20
	3. Moderate	3	6	9	12	15
	2. Minor	2	4	6	8	10
	1. Negligible	1	2	3	4	5
	Remote	Unlikely	Possible	Likely	Certain	
	1.	2.	3.	4.	5.	
		Likelihood				

Part1-B. Information gathering. Considering Controls

Controls – continued

When considering how to control your hazards try to follow the risk hierarchy starting at the top working down the list and question yourself about the hazard.

Eliminate

Eliminating the hazard; Do I need to use that device/object or can I perform the task in a different way.

Substitution

Can I use a different tool, could I use a different material, use an alternative process or pass the work to someone else, i.e. member of staff.

Engineered controls

Is it possible to use extra mechanisms with my process; Protective Barriers, an Interlock on a machine, current limit set on power supply or use fume extraction.

Systems of work

Following specific rules such as COPs, mandatory work practices, using guidance notes or have supervision present.

PPE

Do I need to wear protective equipment such as a mask, gloves, lab coat, Goggles, etc.

NOTE: PPE is worst case scenario. If PPE fails you and others will not be protected!!



Part1-B. Information gathering. Example Activities Table

Task or Activity	Hazard	Consequence	Control	Risk level
Writing code on a laboratory computer.	Using Desktop computer. Working around other experiments.	RSI, Eye strain, Joint aches, Head aches, Electric shock, Being injured by another experiment.	Check equipment for damage. Follow DSE guidance. Take regular breaks. Don't touch other experiments. Be aware of other lab users. Seeks 1 st aid if feeling unwell.	Severity = 2 Likelihood = 1 Risk level = 2
Test circuit on my arm.	Attach a custom made electronic circuit to my arm using electrodes.	Electric shock, allergic reaction, Injury to arm i.e. scratches or cuts.	Use low power with battery supply. Main circuit will be enclosed. Test under supervision. Seek 1 st aider if reaction\injury occurs.	Severity = 3 Likelihood = 1 Risk level = 3

Help and Support

Trying to complete a risk assessment can be difficult as you need to cover unfamiliar activities, hazards, risks and control methods that may not be evident in your project but are in the working location or you may miss out hazards and consequences in the activities that you see as trivial but approvals may not.

Make sure you speak with everyone that is directly and indirectly involved with the work i.e. there may be particular procedures or processes that need to be included in the assessment, such as codes of practice, COSH information, local training activities, inductions, supplementary assessments i.e. laser safety or chemical safety, etc.

Key people you should speak with :

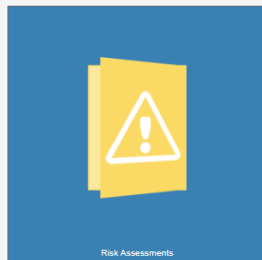
- **Project\Work supervisor.**
 - **Other group members.**
 - **People who maybe working in the area.**
 - **Staff in charge of the work location.**
 - **Safety officers, 1st aiders, fire marshals.**

Part 2. riskNET and the Risk Assessment

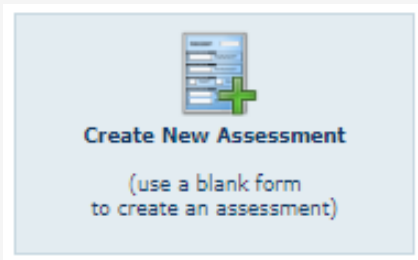
RiskNET is a UCL safety services IT system that helps departments manage their safety responsibilities. It provides tools that make managing safety simpler and less bureaucratic and gives better and more effective feedback about how Departments are performing.

Risk Assessments are performed using risk net.
Navigate to the following area to start a risk assessment using riskNet.

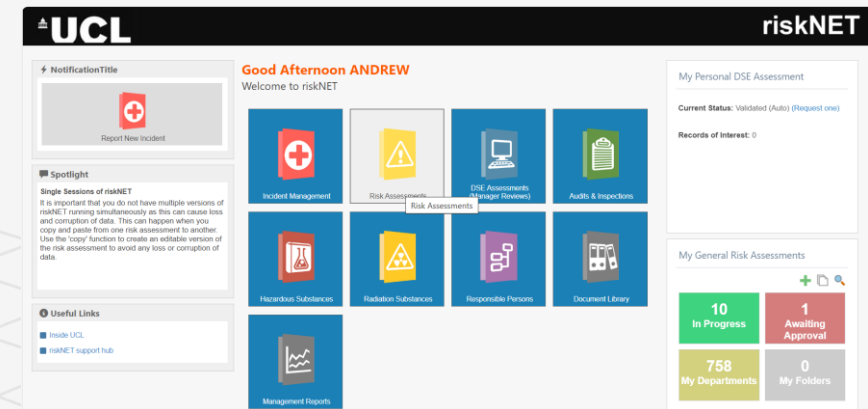
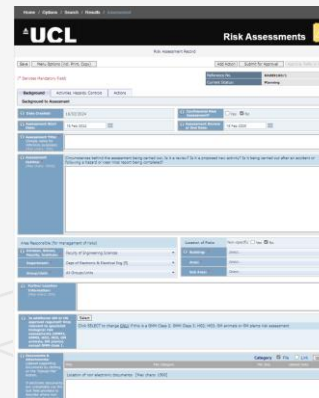
[riskNET \(ucl-safety.co.uk\)](http://riskNET(ucl-safety.co.uk))



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Upon opening starting a new risk assessment you will see it is split into 2 sections; background and activities; just like the previous section information gathering.

Part2. Risk Assessment. Background

The background section is where you layout all of the why, what and where of your assessment regarding the project. Use the information gathered from part 1 To fill in the assessment. Hopefully you will have this information to hand so will be a quick to enter.

1 Is the assessment confidential
Normally this it left as NO unless the assessment contains confidential Information. Such as medical, military, industrial IP and protected information.

2 Set dates
When you are going to start and end the work.

3 Title your assessment
This should match your project report, include course, year of study, etc.

4 Supply an outline of your project
This should state what the project is about/the nature of the work, if the assessment is for a group or individual, where and when you will be working, who your supervisor is, what special equipment will be needed, etc.

The screenshot displays the UCL Risk Assessments system interface. At the top, the UCL logo and 'Risk Assessments' title are visible. Below this, the 'Risk Assessment Record' header is shown. The interface includes a 'Save' button, a 'Menu Options (incl. Print, Copy)' dropdown, and buttons for 'Add Action', 'Submit for Approval', and 'Approve, Refer or Reject'. A table shows 'Reference No.' as RA089298/1 and 'Current Status' as Planning. The 'Background' tab is selected, showing a 'Background to Assessment' section. This section contains several fields: 'Date Created' (21/02/2024), 'Assessment Start Date' (21 Feb 2024), 'Assessment Review or End Date' (21 Feb 2025), 'Confidential Risk Assessment?' (No), and 'Assessment Title' (empty). A large text area for 'Assessment Outline' is also present, with a prompt: 'Circumstances behind the assessment being carried out. Is it a review? Is it a proposed new activity? Is it being carried out after an accident or following a hazard or near miss report being completed?'. Arrows from the numbered text blocks point to these specific fields in the interface.

Part2. Risk Assessment. Background (continued)

- 5 Area responsible**
Automatically populated; check if this information is correct.
- 6 Location of risks**
This is the building and area where your work will carry out.
- 7 Location information**
This the specific location of work. Floor and room number, contact information, operating times.
- 8 GM\HG Approval**
Only required if working with biological hazards and risks of which extra approval is mandatory.
- 9 Documents & attachments**
Use this area to attach extra safety documentation and state reasons why is has been attached. Such as codes of practice, Mandatory rules, COSSH data sheets, other supporting documents, e.t.c.

The screenshot shows a web-based form for risk assessment. It is divided into several sections:

- Area Responsible (for management of risks):** Contains dropdown menus for 'Division, School, Faculty', 'Department', and 'Group/Unit'. Arrows from item 5 point to these fields.
- Location of Risks:** Includes a radio button for 'Non-specific' (Yes/No) and dropdown menus for 'Building', 'Area', and 'Sub Area'. An arrow from item 6 points to the 'Building' dropdown.
- Further Location Information:** A text input field with a character limit of 500. An arrow from item 7 points to this field.
- Is additional GM or HG approval required?** A dropdown menu with a 'Select' button. A note below it says: 'Click SELECT to change ONLY if this is a GMM Class 2, GMM Class 3, HG2, HG3, GM animals or GM plants risk assessment'. An arrow from item 8 points to this dropdown.
- Documents & Attachments:** Includes an 'Upload' button, a table with columns 'Title', 'File Category', 'File Size', and 'Upload Date', a text field for 'Location of non-electronic documents' (1500 chars), and a text field for 'Description of documents and attachments' (1500 chars). An arrow from item 9 points to the 'Upload' button.

Part2. Risk Assessment. Background (continued)

10

Approvers

A minimum of 2 approvers are required, These should be the people in charge of the location. You may need to visit the working area to find out who these are.

11

Assessors

This should be populated with your name as you are performing the assessment. Also add all other group members.

12

Summery

This show who has approved the assessment based on the specified approvers list.

15

Distribution list

This is list of any extra people who need to be informed of your assessment and work practices such as your project supervisor, visitors, members of public, etc.

14

People at risk

Select the types of people at risk from you/your project.

15

Notes & comments

An area where you can leave comments and notes and read any comments made about your assessment during the approval process.

The screenshot shows a web-based risk assessment form. At the top, there are two fields for 'Assessor(s)' and 'Approver(s)', each with a 'Lookup ...' button. Below these is an 'Approval Summary' section with a table for 'Approved By' and 'Date'. The 'Distribution List' section includes a table with columns for 'First Name', 'Last Name', 'Init/Ext.', 'Email Address', and 'Date', along with 'Resend Email', 'or Lookup', and 'Add Group' buttons. A red 'DATA PROTECTION STATEMENT' box is present. The 'PEOPLE AT RISK' section has a list of categories with checkboxes: Employees, Post-Graduates, Undergraduates, Contractors, Members of the Public, Visitors, Disabled Persons, Inexperienced Workers/Trainees, Women of Child-bearing Age, Young Persons, Other Vulnerable Persons, and Other. An 'Add Activities >>' button is at the bottom right of this section. The 'ACTIVITY, HAZARDS & RISK LEVEL SUMMARY' section contains a red box with instructions and a 'Show Summary' button. The 'ASSESSMENT UPDATE LOG' section has a table with columns for 'Made By', 'Date', and 'Comments', and a large text area for notes.

Part2. Risk Assessment - Activities

Activities

In this part you use the information gathered from Part1-B about your tasks to complete the risk assessment activities section, This part is repeated until all activities are listed.

1

Activities, Hazards, Controls

Choose this option for the activities section.

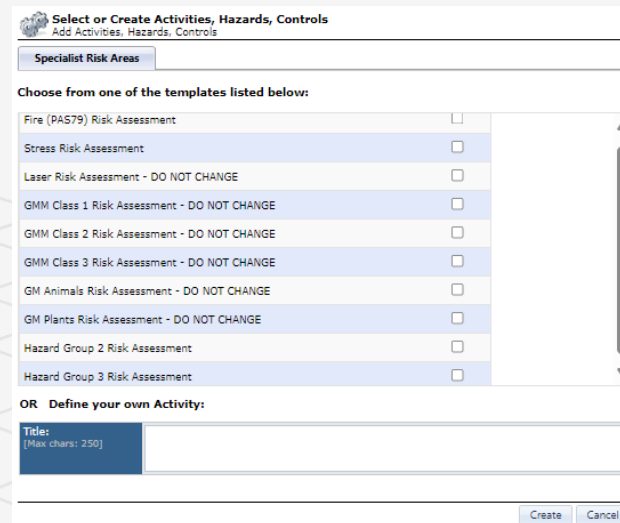


The screenshot shows a software interface with three tabs: 'Background', 'Activities, Hazards, Controls', and 'Actions'. The 'Activities, Hazards, Controls' tab is selected. Below the tabs is a header 'Activities, Hazards & Control Measures'. Underneath is an 'INDEX' section with a table that has columns 'No.' and 'Activity'. The table is currently empty, displaying 'No records to display.'. To the right of the table is an 'Add Activities' button. An arrow points from the text 'Choose this option for the activities section.' to the 'Activities, Hazards, Controls' tab.

2

Add Activities

Use this to start adding tasks\activities to your assessment.



The screenshot shows a dialog box titled 'Select or Create Activities, Hazards, Controls'. It has a sub-header 'Add Activities: Hazards, Controls'. Below this is a section 'Specialist Risk Areas' with the instruction 'Choose from one of the templates listed below:'. A list of templates is shown, each with a checkbox: 'Fire (PAS79) Risk Assessment', 'Stress Risk Assessment', 'Laser Risk Assessment - DO NOT CHANGE', 'GMM Class 1 Risk Assessment - DO NOT CHANGE', 'GMM Class 2 Risk Assessment - DO NOT CHANGE', 'GMM Class 3 Risk Assessment - DO NOT CHANGE', 'GM Animals Risk Assessment - DO NOT CHANGE', 'GM Plants Risk Assessment - DO NOT CHANGE', 'Hazard Group 2 Risk Assessment', and 'Hazard Group 3 Risk Assessment'. Below the list is an 'OR Define your own Activity:' section with a 'Title:' label and a text input field (with a note '(Max chars: 250)'). At the bottom right are 'Create' and 'Cancel' buttons. An arrow points from the text 'Use this to start adding tasks\activities to your assessment.' to the dialog box.

3

Specialist risk area

Premade templates to supplement specialist activities. such as using class3 or above lasers, handling biological materials, working with animals, etc.

4

Title

This is for specific activities as listed in part1 gathered information. The title should state what activity is you will be performing. Such as soldering a PCB, building a circuit on bread board, coding on a computer, etc.

Part2. Risk Assessment - Activities (continued)

Hazards, consequences, controls, risks

In this part each activity requires all hazards you come in contact with the possible consequences, how to control the activity to make it safe, and evaluate the risk level.

- 5 **Activity**
Select the activity to evaluate and asses.
- 6 **Background**
State what the activity is about, where it takes place, etc.
- 7 **Hazards**
List all the hazards one at a time. Note a hazard is something you interact with. i.e. Computer, Power supply, Super glue, Soldering iron, Glue gun, etc.
- 8 **Consequences/injuries**
Each hazard has the potential of causing an incident like fire, spillage, injury to you/others, expelling gas/vapor. List all of the likely consequences of your actions. i.e. burns, blindness, dizziness, electric shock, spillages, etc.
- 9 **Controls**
Each consequence and action needs to be made safe so the likelihood of anything going wrong can be isolated. For each consequence state a method of controlling the situation to make it safe to perform.
- 10 **Risk level**
After the control measures are in place the risk factor of a potential incident happening will be reduced to an acceptable level. Use the table to evaluate the likelihood of anything bad happening and supply a Risk level A to E. Use the previous table in Part1-B to help (*Note: risknet uses letters instead of the HSE number system*).

The screenshot shows the RiskNET software interface. At the top, there are tabs for 'Background', 'Activities, Hazards, Controls', and 'Actions'. Below this is a section titled 'Activities, Hazards & Control Measures' with an 'INDEX' table. The table has columns for 'No.' and 'Activity', with one entry: '1 Soldering a PCB'. To the right of the table is an 'Add Activities' button. Below the table, there are several input fields: 'Full Description of Activity', 'HAZARD 1', 'Potential Consequences / Further Details: (Max chars: 2000)', 'Existing Control Measures', and 'Description of Control Measures: (Max chars: 2000)'. At the bottom, there is a 'RISK LEVEL' section with a dropdown menu and a 'Risk Level: _____' field. To the left of the screenshot, there is a 'Risk Control Hierarchy' diagram and a risk matrix table.

Risk Control Hierarchy

- Most Effective: Eliminating the Hazard
- Substituting the Hazard
- Engineering Controls
- Administrative Controls
- Least Effective: PPE

Risk Matrix Table

Severity \ Likelihood	1	2	3	4	5
5. Catastrophic	5	10	15	20	25
4. Major	4	8	12	16	20
3. Moderate	3	6	9	12	15
2. Minor	2	4	6	8	10
1. Negligible	1	2	3	4	5

Guidance for Non-Specialist Risk Assessments

SEVERITY

- Minor injury
- Lost time injury, temporary disability or illness
- Permanent disability or major injury
- Fatality, multiple serious injuries/illnesses
- Multiple fatalities

LIKELIHOOD

None	Unlikely	Unlikely	Unlikely	Common
A	B	B	B	C
A	B	C	C	D
B	C	C	D	E
C	C	D	E	E
C	D	E	E	E

RISK LEVEL

- A: Very Low / Trivial
- B: Low / Tolerable
- C: Medium / Moderate
- D: High / Substantial
- E: Very High / Intolerable

RISK LEVEL

Please use the fields below to determine the level of risk.

RISK LEVEL WITH BEST CONTROLS:

Risk Level: _____ Risk: _____

Risk Assessment - Part C. Submission & Approval

1

Submit

Once all of the background has been added and activities covered check your assessment before submitting.

Once submitted riskNet informs all of the approvers listed that an assessment needs to be reviewed and assessed for approval.

Note: Once submitted you will not be able to modify the assessment.

Reference No.	RA089298/1
Current Status:	Planning

2

Review and Approval

There is no grading for the assessment the outcome is either approved or rejected.



Approved

If all is well with your assessment it will be approved and the risk assessment will show the approvers who have approved it.

Approver(s) (Person(s) responsible for approving this assessment)	Approver
	GERALD MCBREARTY
	ANDREW MOSS

Approval Summary:	Approved By	Date
	GERALD MCBREARTY	24/11/2023
	ANDREW MOSS	27/11/2023



Rejected

If the assessment is rejected a note will be left detailing what is required for approval. This could be things like extra information required, not fully understanding what you have written, approvers may ask to see you to discuss various elements of the assessment, etc. After updating the assessment it can be resubmitted. *Note many assessment are rejected 1st time.*

Made By	Date	Comments
MOSS, ANDREW	25/10/2023 - 12:03	Rejected: 1. Description of documents and attachments has not been filled in. - 2. Activities section needs work, some Consequences and activities have been stated as hazards and other hazards and risks in the project are missing. See Andrew and Gerald.
MOSS, ANDREW	13/11/2023 - 10:19	Rejected: many things are incorrect with the activities section, See Andrew and Gerald.

Reviewing Your Assessment

When performing an experiment or project many things can change during the work. These changes need to be added or amended to the assessment. So it is important to review your assessment regularly.

Changes could be brought about by things such as:

- **Change of activity.**
 - **Moving or expanding the work location.**
 - **Over running project\experiment.**
 - **If there was an accident or incident.**
 - **Change of legislation related to health and safety policy.**

After changes are made to a risk assessment it must be submitted for approval before the project can recommence.