

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 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 as an informal risk assessment before performing 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 project.

B Activities

A list of tasks you need to perform to complete the 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 and note the year of study.

2 **Set Dates**

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

3 **Outline**

Describe your project in simple terms. i.e. Is this 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 **Documents**

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..

Severity x likelihood = 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 1.	Unlikely 2.	Possible 3.	Likely 4.	Certain 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

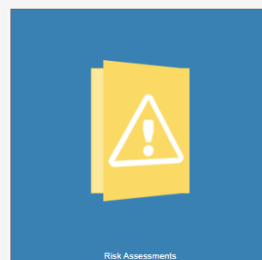
Task or Activity	Hazard	Consequence	Control	Risk level
Writing code in laboratory	Using Desktop computer. Working around other experiments.	RSI, Eye strain, Joint aches, Head aches, Electric shock, Being injured by another experiment.	Check equipment for damage. Follow DSE guidance. Take regular breaks. 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

Part 2. riskNet and the Risk Assessment

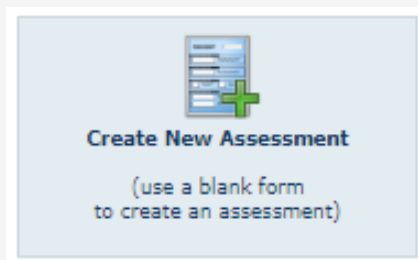
RiskNET is a UCL safety services IT system that helps departments manage their safety responsibilities. It provides tools that make managing safety simpler and less bureaucratic and gives better and more effective feedback about how Departments are performing.

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

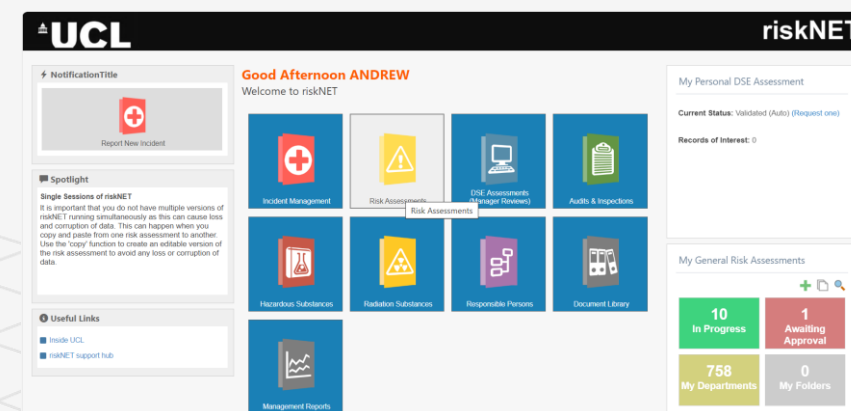
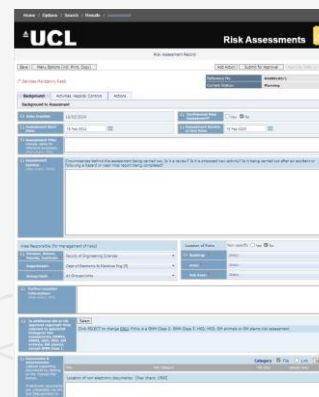
[riskNET \(ucl-safety.co.uk\)](http://riskNET(ucl-safety.co.uk))



>



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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 reports and include year of study.

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 shows the 'UCL Risk Assessments' interface. At the top, there's a header with the UCL logo and 'Risk Assessments' text. Below this is a 'Risk Assessment Record' section. The form includes several tabs: 'Background', 'Activities, Hazards, Controls', and 'Actions'. The 'Background' tab is selected. The form contains the following fields and sections:

- Save** button and **Menu Options (incl. Print, Copy)** button.
- Add Action**, **Submit for Approval**, and **Approve, Refer or Reject** buttons.
- Reference No.**: RA089298/1
- Current Status**: Planning
- Background to Assessment** section with the following fields:
 - Date Created**: 21/02/2024
 - Assessment Start Date**: 21 Feb 2024
 - Assessment Review or End Date**: 21 Feb 2025
 - Confidential Risk Assessment?**: ☐ Yes ☒ No
 - Assessment Title**: (Simple name for reference purposes) [Max chars: 250]
 - Assessment Outline**: (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?) [Max chars: 5000]

Arrows from the numbered list on the left point to the following fields in the form:

- Arrow 1 points to the 'Confidential Risk Assessment?' field.
- Arrow 2 points to the 'Assessment Start Date' and 'Assessment Review or End Date' fields.
- Arrow 3 points to the 'Assessment Title' field.
- Arrow 4 points to the 'Assessment Outline' field.

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 it 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 risk assessment form. Arrows from the numbered list on the left point to the following fields:

- Area Responsible (for management of risks):** A table with dropdowns for Division, School, Faculty, Department, and Group/Unit. The current values are Faculty of Engineering Sciences, Dept of Electronic & Electrical Eng (R), and All Groups/Units.
- Location of Risks:** A section with a checkbox for 'Non-specific' (Yes/No) and dropdowns for Building, Area, and Sub Area.
- Further Location Information:** A text input field with a character limit of 500.
- Is additional GM or HG approval required?** A dropdown menu with a 'Select' button and a note: 'Click SELECT to change ONLY if this is a GMM Class 2, GMM Class 3, HG2, HG3, GM animals or GM plants risk assessment'.
- Documents & Attachments:** A section with a table for file uploads (Title, File Category, File Size, Upload Date) and two text input fields for 'Location of non-electronic documents' and 'Description of documents and attachments', both with a character limit of 1500.

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. Arrows from the text blocks on the left point to the following sections in the form:

- Assessor(s):** (Person drafting this risk assessment) - points to the 'Assessor(s)' field.
- Approver(s):** (Person(s) responsible for approving this assessment) - points to the 'Approver(s)' field.
- Approval Summary:** - points to the 'Approved By' and 'Date' fields.
- Distribution List:** (i.e. who should get a copy of the Assessment) - points to the 'Distribution List' section.
- DATA PROTECTION STATEMENT** - points to the pink box containing the statement.
- PEOPLE AT RISK** (from the Activities covered by this Risk Assessment) - points to the list of checkboxes.
- ACTIVITY, HAZARDS & RISK LEVEL SUMMARY** - points to the 'Show Summary' button.
- ASSESSMENT UPDATE LOG** - points to the table at the bottom.

The form includes fields for 'Assessor(s)', 'Approver(s)', 'Approved By', 'Date', 'First Name', 'Last Name', 'Int/Ext.', 'Email Address', and 'Date'. It also features a 'DATA PROTECTION STATEMENT' and a list of 'PEOPLE AT RISK' with checkboxes for various groups. At the bottom, there is an 'ASSESSMENT UPDATE LOG' table with columns for 'Made By', 'Date', and 'Comments'.

Part2. Risk Assessment - Activities

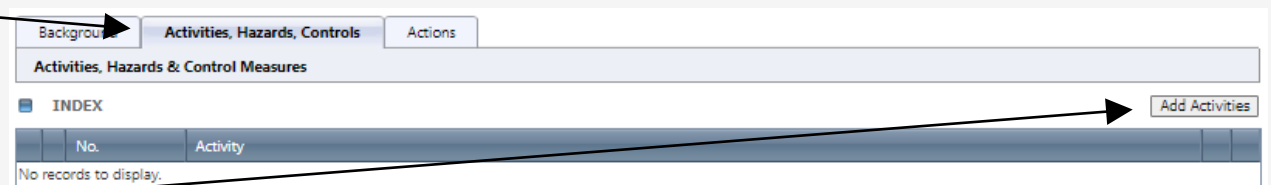
Activities

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' (which is selected), and 'Actions'. Below the tabs is a header 'Activities, Hazards & Control Measures'. Under this header is a sub-header 'INDEX'. Below the sub-header is a table with two columns: 'No.' and 'Activity'. The table is currently empty, with the text 'No records to display.' at the bottom. An 'Add Activities' button is located to the right of the table.

2

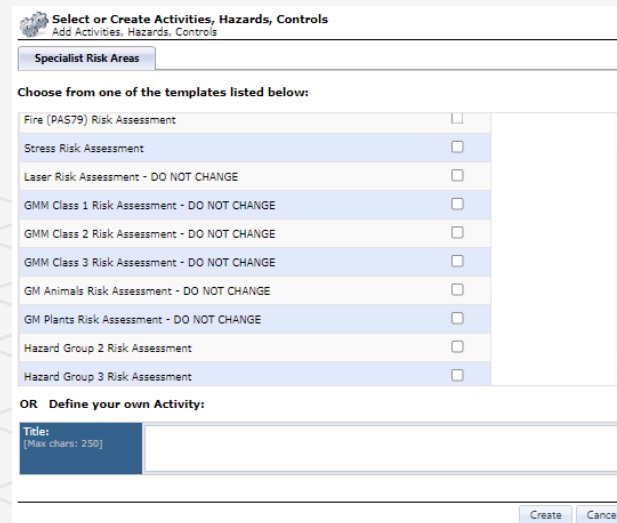
Add Activities

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

3

Specialist risk area

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



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'. Under this section is a list of templates to choose from, each with a checkbox. The templates are: '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 a section 'OR Define your own Activity:' with a 'Title:' label and a text input field. At the bottom right are 'Create' and 'Cancel' buttons.

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.

The screenshot shows a web-based risk assessment tool. At the top, there are tabs for 'Background', 'Activities, Hazards, Controls', and 'Actions'. The 'Activities, Hazards, Controls' tab is active, showing a table with one entry: '1 Soldering a PCB'. Below this is a section for 'Full Description of Activity:'. Further down is 'HAZARD 1' with a section for 'Potential Consequences / Further Details:'. Below that is 'Existing Control Measures' with a section for 'Description of Control Measures:'. At the bottom, there is a 'RISK LEVEL' section with a table for 'LIKELIHOOD' and 'SEVERITY'. The table has columns for 'Remote', 'Unlikely', 'Possible', 'Likely', and 'Certain' under 'LIKELIHOOD', and rows for 'Negligible', 'Minor', 'Moderate', 'Major', and 'Catastrophic' under 'SEVERITY'. The resulting risk levels are 'A: Very Low / Trivial', 'B: Low / Tolerable', 'C: Medium / Moderate', 'D: High / Substantial', and 'E: Very High / Intolerable'. Arrows from the numbered list point to the following fields: 5 points to the 'Activities, Hazards, Controls' tab; 6 points to the 'Full Description of Activity:' field; 7 points to the 'HAZARD 1' section; 8 points to the 'Potential Consequences / Further Details:' field; 9 points to the 'Description of Control Measures:' field; and 10 points to the 'RISK LEVEL' section.

SEVERITY \ LIKELIHOOD	Remote	Unlikely	Possible	Likely	Certain
Catastrophic	25	20	15	10	5
Major	15	12	8	4	2
Moderate	10	8	5	3	1
Minor	5	4	2	1	0
Negligible	1	0	0	0	0

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.

Risk Assessment

Save Menu Options (incl. Print, Copy) Add Action Submit For Approval Approve, Refer or Reject

[All fields on this page are mandatory.]

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:		Date	
Approved By			
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.

ASSESSMENT UPDATE LOG		
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.

[Max chars: 1000]