Laboratory Research/Project Pack

School of Engineering and the Environment

This pack includes:

- Health and safety agreement: (As this sheet)
- Local safety rules: (Appendix 1a, b or c as applicable)
- Project outline with timeframe: (Appendix 2)
- Technician contact details: (Appendix 3a, b or c as applicable)
- Laboratory time sheet: (Appendix 4)
- Risk assessment form: (Appendix 5)
- Evaluation of risk assessment: (Appendix 6)
- COSHH assessment form: (Appendix 7)
- Lone/ Out of Hours Request Form (Appendix 8)
- Silent hours authorisation form: (Appendix 9)
- Project materials listing form: (Appendix 10)

The student is required to fill in all of the above forms and sign them in agreement. It is also the student's responsibility to get their supervisor to sign off this research/project before approaching the technicians. Once the 'Lab research/project pack' is completed and signed it is a requirement to book appointments with the relevant technicians, as you may require the facilities of more than one lab (see appendix 3 for contact details). If, for any reason, you are unable to make an appointment it is your responsibility to inform the technician concerned. Note that if any of the conditions in this pack are not adhered to this could jeopardise your future use of the laboratories and subsequently affect your degree.

Student agreement:

I have read the attached. I understand and agree to abide by the rules and regulations set down by the University of Kingston and the Faculty of Science, Engineering & Computing.

Student name:	K. No:	Signature:
Level of study:	End date:	
Supervisor name:		Signature:
Technician name:		Signature:

Note: For group projects a list of student's names & numbers please.

Laboratories are open 8:30 - 13:00 and 14:00 – 17:00 (16:30 Friday)

Health & Safety has always been most important aspect of our working lives at Kingston University, and this year we will be doing even more to make sure that Health & Safety rules and guidelines are strictly adhered to. So please take a few moments to read the following:

- Observe door safety signs, and other safety signs within laboratories and workshops at all times.
- Make sure you always bring safety clothing (lab coat, safety specs etc) to laboratory and workshop sessions.
- Make sure you arrive on time; you will not be permitted to enter sessions if you miss the initial safety talk.
- Wear appropriate safety and personal clothing (fully-enclosed footwear for example) at all times while working in labs and workshops. Use the protective gloves provided.
- Listen to, and act on instructions given to you by technicians and supervisors.
- Make sure you read, understand fully, and comply with method sheets given to you; including risk assessment and COSHH information. If in doubt, you MUST ask.
- Familiarise yourself with the COSHH symbols displayed on safety information. Make sure you understand what they mean.
- Help others stay safe: if you notice anyone doing something you consider unsafe, draw it to their attention. It's likely they're not doing this intentionally, and will thank you for the warning. If this doesn't work, then alert a technician or supervisor.
- Please clean-up any spillage at once, and alert a technician or supervisor.
- No mobile phones to be brought into labs or workshops.
- In the event of a fire alarm activation, listen to and follow instructions given to you by technicians and supervisors.
- Protective safety glasses and gloves need to be worn when appropriate.
- A lab coat and safety shoes are to be worn at all times whilst working in the laboratories.
- It is the student's responsibility to clean all equipment after use and tidy up at the end of the session.
- All projects should be clearly marked with your name, dated and stored correctly. Note that any unidentified projects will be disposed of.
- Eating and drinking is not permitted in any laboratory.
- Laboratories are open 8:30 - 13:00 and 14:00 – 17:00 (16:30 Friday). Requirements outside of these times will have to be formally arranged with your Supervisor.
- If you have any concerns about health & safety then please contact the Health & Safety Office by email: safety@kingston.ac.uk or k.attree@kingston.ac.uk: all correspondence is dealt with in the strictest confidence.

Remember safety is everybody's responsibility and we must all work together to keep everybody safe

For further information, please contact Kevin Attree (Faculty Health & Safety Advisor) Ext. 67058 or email on k.attree@kingston.ac.uk

Appendix 1b: Local Health & Safety Rules (Engineering)

- A lab coat and safety shoes are to be worn at all times whilst working in the laboratories.
- Protective safety glasses and gloves need to be worn when appropriate.
- It is the student's responsibility to clean all equipment after use and tidy up at the end of the session.
- All projects should be clearly marked with your name and the type of material, dated and stored correctly. Note that any unidentified project work will be disposed of.
- Eating and drinking is not permitted in any laboratory.
- The latest time any project work can be undertaken is 4.15pm as the labs close at 5:00pm. Any hours outside 8.30am – 5:00pm will have to be arranged formally with your supervisor.

Appendix 2: Outline of research/project proposal

- Project topic and brief outline including objectives.

- Which equipment/procedures do you intend to carry out and over what duration?

- You will need a detailed proposal (including drawings giving dimensions of your specimen(s) and cutting list if applicable)

- Please specify all the different types of materials and quantities required for your experiments, as well as any consumables with their estimated quantities.

- Please specify how the project will be recycled or stored after completion.

Appendix 3b: Technician Details (Engineering)

Alex Vine ***Assistant Technical Officer***

Room RV.MB.060 ***Email: A.Vine@kingston.ac.uk***

Alex's role at the University is to ensure the smooth operation of the workshops and labs here at Roehampton Vale.

Please come and speak to Alex if you require any assistance concerning the labs.

Martin Theobald ***Senior Technician***

Main Workshop RV.MB.026 ***Email: M.Theobald@kingston.ac.uk***

Martin is based in the Machine lab where he runs classes in engineering practices and works with students on their individual and group engineering projects.

Mayur Jani ***Senior Technician***

Automotive RV.MB.084 ***Email: M.Jani@kingston.ac.uk***

Mayur is based in the Automotive lab where he covers everything automotive with students on their individual and group projects.

Mayur also assists with the running of the Formula Student team.

Cliff Searle ***Senior Technician***

Fluid Dynamics RV.MB.049 ***Email: C.Searle@kingston.ac.uk***

Cliff works primarily in the Fluid Dynamics lab with our Wind Tunnels. Cliff also works in Metrology and Machine lab classes. Cliff works with students on their individual and group wind tunnel projects.

Dean Wells ***Senior Technician***

Materials RV.MB.035 ***Email: D.Wells@kingston.ac.uk***

Dean is based in the Materials and Composites labs. Dean also assists in the Machine lab on occasions.

Dean works with students covering material classes and on their individual and group projects.

Andrew Chaplin Senior Technician

Main workshop RV.MB.026 ***Email: A.Chaplin@kingston.ac.uk***

Andrew is based in the Machine lab and the Advanced Manufacturing Suite and work with students on their individual and group engineering projects.

Please speak to Andrew regarding your 3D printing requirements.

Dave Haskell Senior Technician

Main workshop RV.MB.026 ***Email: D.Haskell@kingston.ac.uk***

Dave is based in the Machine lab covering all things Aero and the Advanced Manufacturing Suite covering all things 3D printed. Dave works with students on their individual and group Aero projects.

Jon Amblin Senior Technician

Electronics RV.MB.003 ***Email: J.Amblin@kingston.ac.uk***

Jon is based in the Electronics lab on the ground floor where he runs practical electronic classes. Jon can also be found on the first floor in the electronic labs.

Jon works with students on their individual and group projects.

Shaun Don Senior Technician

Electronics RV.MB.003 ***Email: S.Don@kingston.ac.uk***

Shaun is based in the Electronics lab on the ground floor, where Shaun runs practical electronic classes. He can also be found on the first floor in the electronic labs.

Shaun works with students on their individual and group electronic and drone (Fly zone) projects.

Appendix 4: Laboratory Pack Timesheet

Brief Description	**Time**			**Academic/Technician Signature**	**Student Signature**
	Date:	**From**	**To**		

Appendix 5: General Risk Assessment

SITE: Roehampton Vale	LOCATION:	ACTIVITY/SITUATION:
COMPLETED BY:	**Name:**	**Date:** **Review date:**

	HAZARDS IDENTIFIED	POPULATION WHICH MAY BE AFFECTED				POPULATION PARTICULARLY AT RISK			
		EMP	STU	CON	V/P	CRN	YPS	NEM	DIS
a)									
b)									
c)									
d)									
e)									

EMP=Employee, STU = Student, CON = Contractor, V/P = Visitor / Public,
CRN = Children, YPS = Young Persons, NEM = New & Expectant Mothers, DIS = Disabled

	EXISTING CONTROL MEASURES (e.g. procedures, supervision, training, safety signs and information, PPE etc.)
a)	
b)	
c)	
d)	
e)	

	POTENTIAL SEVERITY (3)			LIKELIHOOD (3) (taking existing control measures into consideration)			RISK RATING (Sev. x L'hd)	ADDITIONAL CONTROL MEASURES TO BE IMPLEMENTED (if required)	By Whom? By When?
	1	2	3	1	2	3			
a)									
b)									
c)									
d)									
e)									

SEVERITY: 1 = Slight Injury, 2 = Serious Injury, 3 = Major Injury or Death LIKELIHOOD: 1 = Low, 2 = Medium, 3 = High

RE ASSESSMENT (Following implementation of control measures) OR REVIEW

	POTENTIAL SEVERITY (3)			LIKELIHOOD (3) (taking existing control measures into consideration)			RISK RATING (Sev. x L'hd)	ADDITIONAL CONTROL MEASURES TO BE IMPLEMENTED (if required)	By Whom? By When?
	1	2	3	1	2	3			
a)									
b)									
c)									
d)									
e)									

SEVERITY: 1 = Slight Injury, 2 = Serious Injury, 3 = Major Injury or Death LIKELIHOOD: 1 = Low, 2 = Medium, 3 = High

Appendix 6: Evaluation of Risk Level

Likelihood of occurrence	Likelihood level
Harm is certain or near certain to occur	High: 3
Harm will often occur	Medium: 2
Harm will seldom occur	Low: 1

Severity of harm	Severity level
Death or major injury	Major: 3
3 day injury or illness	Serious: 2
All other injuries or illnesses	Slight: 1

Risk = Severity x Likelihood

Likelihood	Severity		
	Slight: 1	Serious: 2	Major: 3
Low: 1	Low: 1	Low: 2	Medium: 3
Medium: 2	Low: 2	Medium: 4	High: 6
High: 3	Medium: 3	High: 6	High: 9

Thus:

6 – 9 = High risk

3 – 4 = Medium risk

1 – 2 = Low risk

Extract from: NEBOSH – Introduction to Health & Safety at Work – 4th Edition

David Utton: 15th August 2013

Appendix 7: COSHH Assessment Form

	COSHH Risk Assessment No:	**Kingston University** London

Assessor:	**Site:**	**Room No:**	**Date:**

Describe the activity or work process. (Include how long and how often this is carried out and the quantity of substance used).		
Location of process being carried out		Qty in Use:

Identify the persons at risk:	☐ Academic ☐ Technical ☐ Students ☐ Other If other please state:

Hazards associated with compounds/substances used and measures to be adopted to prevent exposure and to control the risk (Notes 1 and 2) A list of H&P Phrases Can Be Found Here: https://staffspace.kingston.ac.uk/dep/estates/healthsafety/Documents/190718%20CLP_Regulation_No_1272-2008_A1_Poster_II.pdf

Substance	**Hazard & Risk**	**Measure to control risk**
(All substances to be included)	H - Hazard Phrases	P – Precaution Phrases

Hazard Pictograms							
	☐	Very toxic/toxic		☐	Skin & eye irritant		☐ Environmental
	☐	Flammable, self-reactive, pyrophoric		☐	Gases under pressure		☐ Oxidising
	☐	Mutagen, carcinogen, reproductive		☐	Corrosive, serious skin & eye damage		☐ Explosive
	☐	Biohazard	*If ticked you **must** complete BioCoSHH Risk Assessment Form found here: https://staffspace.kingston.ac.uk/dep/estates/healthsafety/Documents/190718%20BioCoSHH%20Risk%20Assessment%20Master%20June%202019.doc*				

Hazard Type							
☐ Gas	☐ Vapour	☐ Mist	☐ Fume	☐ Dust	☐ Liquid	☐ Solid	☐ Other
If other please state:							

Route of Exposure				
☐ Inhalation	☐ Skin	☐ Eyes	☐ Ingestion	☐ Other
If other please state:				

Workplace Exposure Limits (WELs) (Note 3) *Please state n/a where not applicable*					
Short-term (15 min) ppm			Long-term (8 Hr)		
Substance	ppm	Mg m³	Substance	ppm	Mg/m³
Is health surveillance or monitoring required?			☐ Yes	☐ No	

Personal Protective Equipment *(State type and standard)*			
☐ Dust Mask		☐ Visor	
☐ Respirator		☐ Goggles	
☐ Gloves		☐ Overalls	
☐ Footwear		☐ Other	

First Aid Measures – Including immediate treatment

Accidental Release Measures/spillage

Storage

Disposal of Substances & Contaminated Containers			
☐ Hazardous Waste	☐ Skip	☐ Return to supplier	☐ Other
If other please state:			
Is exposure adequately controlled?	☐ Yes	☐ No	

Risk rating following control measures		
☐ High	☐ Medium	☐ Low

Additional safety information

Information on COSHH may be found on the following websites:

Health and safety Executive (HSE): www.hse.gov.uk/coshh/index.htm
Edinburgh University (H&S Department): www.safety.ed.ac.uk/resources/General/CoSHH2005.shtm

Note 1: Sources of data include: container labels, manufacturers' safety data (MSDS, Material Safety Data Sheets), chemical catalogues (e.g.:
Aldrich; Fluka) and websites (e.g.: ESIS (European chemical Substances Information System) :
http://esis.jrc.ec.europa.eu/)
For a list of Risk and Safety Phrases (R and S Phrases) check commercial catalogues (e.g.: Aldrich; Fluka) or the HSE website at
http://www.hse.gov.uk/chip/phrases.htm

Note 2: Measures to Control Risk should be selected from the following: open bench; fume cupboard; eye protection; gloves; other (indicate) according to the relative S (Safety) phrase for the compound (Note 1).

Note 3: Workplace Exposure Limits: Workplace Exposure Limits (WELs) are given as the maximum concentration of an airborne substance averaged over a reference period (the time-weighted average, TWA). The short-term exposure limit will refer to a 15 minute reference period (and must never be exceeded), the long-term to an 8-hour period. They are usually quoted as mg/m3 or ppm. A table of WEL can be found on the HSE document: EH40/2005 (amendment 2007: http://www.hse.gov.uk/coshh/table1.pdf). The absence of a substance from EH40 in no way implies that use of the substance is hazard-free.

Note 4: Additional Safety Information will include vacuum and pressure systems, cryogenic substances, extreme temperatures, UV/IR radiation.

Appendix 8: Lone/Out of Hours Working Policy for laboratories (not computer laboratories)

Laboratories within the Faculty of Science, Engineering & Computing have a designated safety classification. (Appendix A).

Category A & **B:** Lone working is not permitted that involves machinery with external moving parts.

Category C: Staff & Research Students may work alone subject to the parameters of operational Security arrangements. Lone working is at the discretion of the supervisor or line manager, who will make a judgement depending on the hazards involved and the experience of the operator.

- Out of hours working is defined as anytime outside of normal working hours, which are 8.30am – 5.00pm Monday to Friday (excluding bank holidays) for all laboratories except for computer laboratories.

- For work in laboratories other than computer laboratories, requests by any individual should be submitted to their Supervisor and local Technical Officer/Manager for approval 48 hours prior to the commencement of work. All applications (appendix B) must be accompanied by completed Risk and COSHH assessment forms, detailing the activities that will be undertaken.

- Risk assessments and COSHH forms must be signed off by the Supervisor, line manager or a substitute at a similar or higher level in the University.

- All applicants for out of hours working are required to undertake specific training on the use and handling of chemicals, equipment and processes. This will be assessed by the approved onsite technical staff member.

- Applicants must have attended the local safety talk given by an appropriate Technical/Assistant Technical Officer.

- Applicants must be aware of University Policies such as COSHH, Risk Assessment, PUWER, Manual Handling and Personal Protective Equipment (PPE).

- In case of emergency, applicants must be aware of local evacuation procedures. This includes the nearest phone, fire alarms and power isolation devices. In case of emergency, all applicants are to contact security on ext. 66666 and to use the contact details of their Supervisor.

- Work will be assessed with regard to the number of persons required to safely undertake the task. Where it is deemed a single person's work load then arrangement must be made for regular checks by another member of staff or Security on a regular basis.

- All applicants are required to sign the work permit (Appendix C), acknowledging that the necessary training has been received and understood.

- In all cases, on-site security must be informed of intention to work, requesting permission with details of specific timings and location.

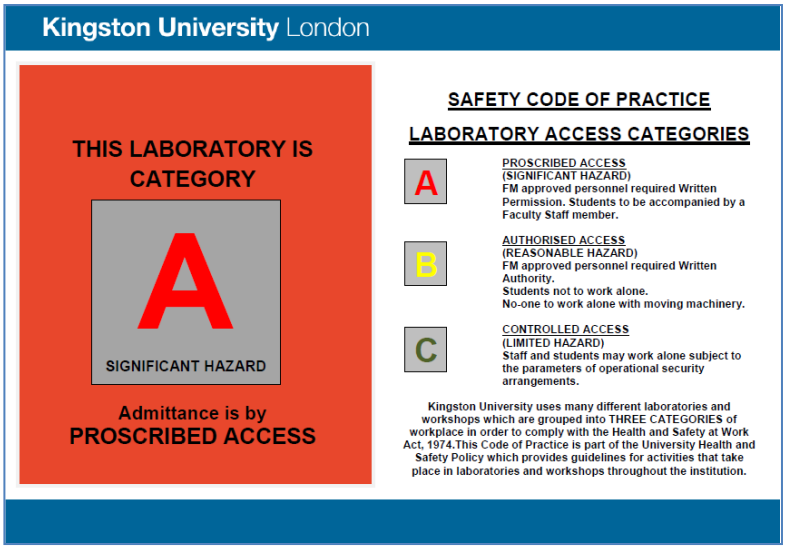
- Procedures must be put in place to monitor lone workers to help keep them healthy and safe. These may include:

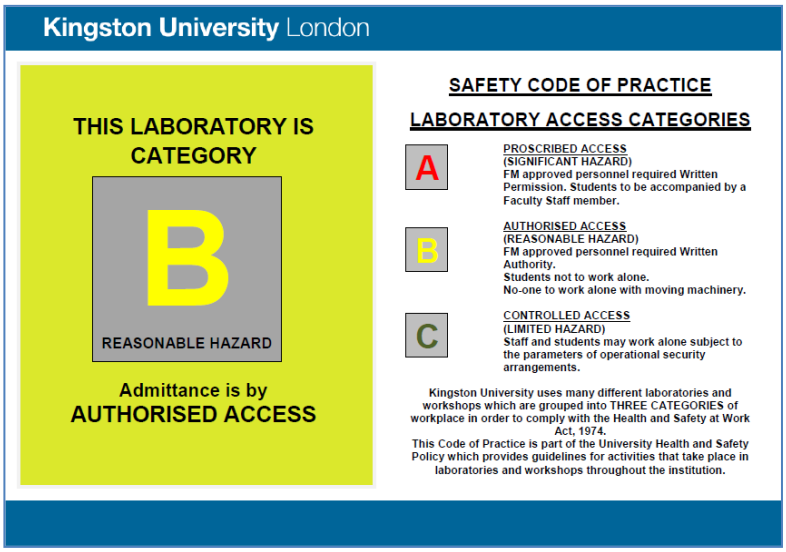
    - Supervisors periodically visiting and observing people working alone;

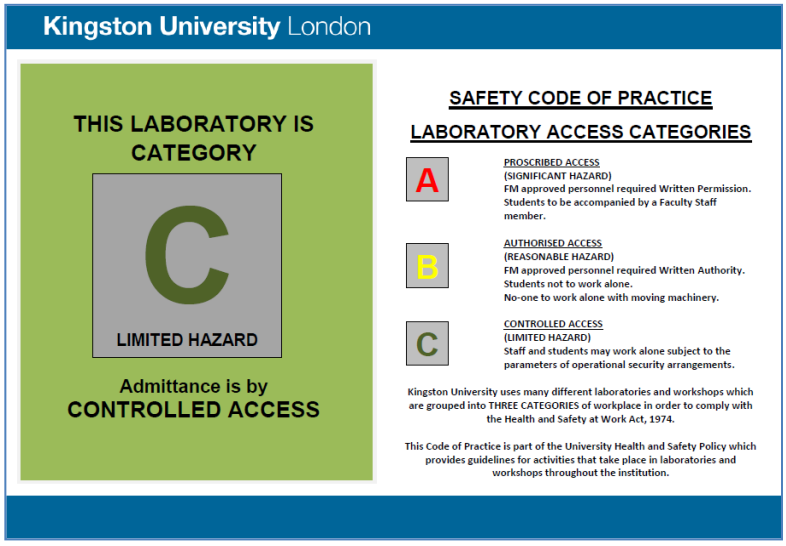
  - Regular contact between the lone worker and supervisor, using either mobile phones, telephones, radios or e-mail, bearing in mind the worker's understanding of English;
  - Automatic warning devices, which operate if specific signals are not received periodically from the lone worker, e.g. staff security systems;
  - Other devices designed to raise the alarm in an emergency, these can be operated manually or automatically by the absence of activity;
  - Checks to ensure a lone worker has returned to their base or home once their task is completed.

- Security must be informed when and where lone working is to be carried out and when it has finished. Security may veto the lone working. The applicant must arrange for regular checks to be made by Security or another member of staff during the course of lone working.

Laboratory Categories







Lone/Out of Hours Working: Application Form

Name:	
Date:	
Designated work area:	
Work/Project:	
Equipment/Tools to be used:	
Description of work to be undertaken:	
Special Instructions:	

	Name	Signature	Date
Applicant:			
Technical Officer/Manager:			
Supervisor:			

General Work Permit	No.

Please Print Details	
Permit Receiver/Competent Person:	Location of work/equipment to be used:
Names of persons detailed to undertake task	Details of task:

Preparations/Precautions – *Tick as appropriate*	Yes	No	Preparations/Precautions – *Tick as appropriate*	Yes	No
Is there a justifiable reason for out of hours working			Will the work involve the use of hazardous substances, heat, cryogenics, vacuum or high pressure?		
Does the workplace present a particular/significant risk			Are certain groups of people especially at risk, e.g. immunocompromised, dyslexics, men, women?		
Is there safe access and egress for people concerned			Will the work require access to restricted/containment areas or confined spaces?		
Will the work involve/require any access equipment or working at height?			Will the work include lasers or other light, UV or IR sources or other types of electromagnetic sources?		
Will the work involve the use of plant or mechanical handling equipment?			Will the work include naked flames, smoke or fire?		
Will the work involve compressed gases and/or air?			Will the work involve gas, electricity or water?		
Will the work involve access to moving parts?			Will the work require hand tools, sharp implements, needles or glass?		
			Will the work increase the severity of a known medical condition?		

Incident Plan	
a. Access justification for work request.	e. Isolate power
b. Phone security ext. 66666	f. Evacuate area
c. Raise alarm	g. Contact Supervisor
d. Make area safe	

Personal Protective Equipment (Tick Box)							
Goggles/Spectacles		Ear Defenders		Hard Hat/Cap		Respirator	

Overalls/Boiler suit		Safety Shoes/Boots		Gloves/Gauntlets		Gaiters/Leggings/Spats	

Demonstrated Safe Use of Equipment		
Name:	Date:	Signed:

Location of Aid Equipment:

Appendix 9: Silent hours authorisation form

Authorisation of unattended running of experiment outside normal working hours

Location:	Ref. No.

Brief description of experimental procedure, indicate details of chemicals used

The following services must be left on:

Electricity	yes/no	Compressed gases (state which)	yes/no
Water	yes/no		
Gas	yes/no	Vacuum	yes/no
Other	yes/no	Compressed air	yes/no

Time:

Between	Time: Date:	and	Time: Date

In the event of emergency procedure to be adopted in switching off apparatus:

Emergency contacts (these must be at least the student and supervisor):

	Name	Address (optional)	Telephone (optional)	Position held
1.	(Student)			
2.	(Academic Supervisor)	(In emergency contact Head of School or Deputy Head of School)		

Signed:	(Print name)
Countersigned:	(Print name)

Top copy to be placed in plastic sleeve on or near apparatus. Second copy to Penrhyn Road Security (Reception desk), together with addresses and phone numbers of contacts. **Version 6: July 2012**

Appendix 10: Project materials request form

PROJECT MATERIALS REQUEST FORM

Please print clearly

Name	*Supervisor Name*
Lab	*Supervisor Signature*
Date	*COSHH assessment attached?*
Course details:	

Quantity	*Grade*	*Item – please list all synonyms*	*Supplier*	*Catalogue No.*	***Price***

Received by Technician	*Date*
Received by Stores	*Date*
Received in Lab	*Date*