

UNIVERSITY OF ABERDEEN

SCHOOL OF ENGINEERING

FIELDWORK SAFETY HANDBOOK

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- **Introduction**

The School's commitment to health and safety extends to all fieldwork activities including

- organised group fieldwork courses and
- individual projects carried out by students in the field.

This handbook describes how the School gives practical effect to that commitment. Compliance with the requirements and procedures in the handbook is mandatory for all staff and students in the School.

Information is included on the main hazards which might be encountered during fieldwork and the precautions which should be taken. The information provided is not however exhaustive. Because of the varied nature of fieldwork it is not possible to cover every circumstance. Those planning group fieldwork and students undertaking individual fieldwork projects (as well as their supervisors) must, where necessary, consult other sources of information with a view to ensuring that fieldwork is carried out safely.

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B. Statement of policy on lone working

Whenever possible fieldwork should be carried out in groups containing at least two persons. There may however be circumstances when lone working cannot be avoided.

Lone working in the field may only be carried out with the express permission of the lone worker's supervisor. Lone working should be sanctioned only after a thorough assessment of the risks has been carried out taking into account

- the nature of the work
- the hostility of the location
- the experience and capabilities of the worker (particularly as demonstrated during group fieldwork courses).

A safe system of work must be devised to safeguard the health and safety of the lone worker. Matters to consider include

- Notification to someone of route, destination, nature of work and expected time of return
- The action to be taken if the lone worker does not return on schedule
- Means of communications with the lone worker
- Restrictions on the types of activities to be undertaken by the lone worker

In some cases it may be possible to reduce the risks arising from lone working by arranging for fieldworkers to work in adjacent areas and to share the same accommodation.

Note: Someone can be a lone worker even if they are working in a situation where there are other people around them. For example, someone carrying out interviews in a public place or in someone's home would be deemed to be a lone worker unless they were accompanied either by someone from the School or by someone otherwise involved in the work.

C. Summary of responsibilities for group fieldwork courses

Fieldwork Course Leader

For each group fieldwork course the Head of School will appoint a suitably experienced member of staff as Course Leader. The Course Leader will be in overall charge of all participating students and staff and will be responsible to the Head of School for all safety aspects of the course.

The Course Leader must:

- Appoint a Deputy Leader to act as Course Leader in the event that the Course Leader is incapacitated
- Appoint members of staff to take charge of various aspects of the course as the Course Leader deems appropriate
- Ensure that there are sufficient staff participating in the course so as to maintain suitable staff/student ratios at all times
- Lodge with the School Office, prior to departure, details of
 - all staff and students participating in the course with details of information disclosed by the participants (medical conditions, emergency contacts etc)
 - locations to be visited with expected dates and times
 - overnight accommodation to be used with contact telephone numbers
 - transport to be used
- Ensure that all aspects of the course which could give rise to significant health and safety risks are assessed for risk and steps are taken to reduce the risks to acceptable levels. (Where necessary the Course Leader should ensure that reconnaissance visits are made in advance of the course.)

- Ensure that staff and students are provided with necessary safety instruction and training to enable them to work safely in the field
- Report in writing to the School Safety Adviser details of any accidents and safety related problems encountered during the course so that steps can be taken to prevent similar problems occurring during future courses

Note: The Course Leader has the authority to exclude from all or part of the course any student who, in the opinion of the Course Leader, is not able to undertake course activities safely or whose behaviour is unacceptable.

Members of staff

All members of staff participating in field courses must

- Act on the instructions of the course leader and on the instructions of other members of staff in charge of particular activities
- Supervise students who have been placed under their direct control to the extent necessary to ensure that fieldwork is carried out safely

Students

All students participating in field courses must

- Read and sign a Hazards Assessment form which outlines specific hazards and the student's responsibility to avoid risks and minimise potential dangers (Appendix 2).
- Comply with all course arrangements and instructions given by the course leader and other members of staff
- Stay with their group and stay with the course unless clear arrangements to leave the group or the course are made with the Course Leader
- Wear adequate clothing, protective footwear and other necessary protective equipment when required
- Bring to the attention of a member of staff any situation which they believe to be unsafe
- Act in an appropriate manner and not, either during course time or leisure time, in a manner which other students, staff or local inhabitants might regard as unsociable or offensive

D. Group fieldwork courses

Group fieldwork courses will usually involve visits to pre-arranged locations. Students will be accompanied by members of staff. There may be times when the group will break up into smaller sub-groups. Small groups of students may work for periods without direct supervision from a member of staff.

Course Leader

For each group fieldwork course the Head of School will appoint a suitably experienced member of staff as Course Leader. The Course Leader will be in overall charge of all participating students and staff and will be responsible to the Head of School for all safety aspects of the course.

Planning of group fieldwork courses

The Course Leader is responsible for planning the course so as to reduce the health and safety risks to acceptable levels. Checklists of matters to be considered are included as part of this handbook. If necessary, reconnaissance visits should be made to locations which will be visited during the course.

Preparation of students for group fieldwork courses

Before leaving the School each student participating in an organised fieldwork course must complete a “disclosure of information” form specific to the course and submit it to the Course Leader. The information provided will be used to compile lists of

- Students with medical conditions which might affect their ability to carry out fieldwork or the treatment they might need in an emergency
- Students with special dietary requirements
- People who should be contacted in an emergency

List will be held in confidence and will be disclosed to members of staff in the School on a need-to-know basis.

Each student participating in a group fieldwork course will be given advance information about protective clothing, footwear and any special equipment required. Students must note that the Course Leader has the authority to exclude from all or part of a course any student arriving at the departure point without essential equipment, footwear and clothing.

Students will be given advance information about any vaccinations which are required by course participants.

Training and instruction for those participating in group fieldwork courses

This handbook contains details of many of the risk control measures appropriate to the hazards encountered during fieldwork. All those participating in a group fieldwork course must appreciate the hazards which will be encountered and the precautions which should be taken. Not only is this essential to ensuring their safety during the course, it will also help them to acquire skills which will be necessary if they later carry out individual fieldwork projects.

It will rarely be sufficient for participants to be asked only to sign a declaration that they have read and understood this handbook or the safety content of other course documentation. Course Leaders must take more positive steps to ensure that course participants appreciate the salient points. This may involve a combination of some or all of the following:

- Briefings before leaving the University for the field locations
- On residential courses, evening discussions about the next day’s locations and/or briefings in the morning before departure
- Repeat instruction on specific points in the field at or near particular locations
- Repeat instruction if the conduct of participants indicate that they might not have understood earlier instructions

Command structure

The Course Leader must ensure that there is an unambiguous command structure in the field. Before the course begins the Course Leader must appoint a deputy who will act as Course Leader if the Leader should be incapacitated.

Individual members of staff may be designated by the Course Leader as responsible for particular aspects of the course (e.g. equipment, transport).

If the course breaks into smaller groups, someone must be designated as in charge of each sub-group.

All those participating in the course must be aware of the command structure, understand that they must follow instructions given by those in supervisory positions and recognise their responsibilities to bring any questions and problems to the attention of their supervisors.

If the command passes to other persons on a temporary basis (e.g. from the Course Leader to a boat skipper during travel by boat), all members of the group must be kept fully informed

Before departure from Aberdeen

The Course Leader must deposit copies of the following with the School Office before the course departs:

1. A list of staff and students participating in the course (along with passport details for trips outside the UK)
2. For each participant, details of emergency contacts and details of any medical conditions disclosed
3. An itinerary and timetable for the course. Addresses and contact telephone numbers must be provided for any overnight stops. If major changes are made after the course has departed, these must be notified to the Office by telephone or fax
4. Details of transport which will be used (including registration numbers of vehicles if known)

Before departure for a field location

Group fieldwork courses must always be supported by a base which has knowledge of

- work to be performed on that day
- itinerary and expected return time
- names of members of the party going into the field on that day

This can be achieved in a variety of ways. For example, members of staff may remain behind and act as the support base or a local inhabitant may be provided with the information. Whoever acts as the local support base, it is vital that they know what action should be taken if the group fails to return when expected. The details of the group's itinerary must provide sufficient detail to enable the route to be followed by a search party

On return always ensure that the base is told that the group is back. If the group cannot for any reason return at the planned time, make efforts to inform the base or the police of the delay. Failure to do this promptly could result in search parties being sent out unnecessarily.

Staff/student ratios and group sizes

Staff/student ratios and maximum/minimum group sizes will vary according to the experience of participants, activities being undertaken and the nature of the sites being visited.

E. Transport

Determining arrangements for control of transport is an essential part of planning for group fieldwork courses.

- The Course Leader must approve the use of all road vehicles and boats to be used by course participants (including vehicles belonging to staff or students)
- Staff and students who act as drivers must be individually authorised by the Course Leader who must ensure that they have necessary driving experience, an appropriate driving licence and approval from the University to drive any University vehicles. (Particular attention must be paid to the “hire or reward” restriction on most UK car driving licences applicable when driving vehicles capable of carrying more than 8 passengers. Nearly all fieldwork will be undertaken under conditions of “hire or reward”. Drivers will need to obtain PCV entitlement or, in the UK only, ensure that the vehicle is covered by a small bus permit. Drivers who passed their car driving test after 1st January 1997 will have different restrictions on their driving licences and are unlikely to be able to drive vehicles capable of carrying more than 8 passengers unless they take a further driving test and undergo a medical examination.) ***It is also mandatory that all drivers successfully complete the Defensive Driving Course.*** These courses are run locally and can be arranged by the Technical Resources Officer.
- The Course Leader should remind staff and students that it is their responsibility to ensure that they have adequate insurance cover (and that their insurance company is aware that the vehicle will be used for fieldwork) before using their personal vehicles for fieldwork.
- There must be sufficient number of back-up drivers to allow drivers to have adequate rest periods and to cover for circumstances when designated drivers might be incapacitated.
- One driver must be designated as in charge of each vehicle. He/she will be responsible for the condition of the vehicle and for carrying necessary daily and weekly checks. The Course Leader must ensure that the driver is competent to carry out these checks. Under UK legislation ***every driver is personally responsible for the vehicle he/she is driving. A vehicle that is in a potentially unsafe condition should never be used.***
- Drivers should make sure that all materials and equipment carried are stowed in a safe fashion for both routine transport and in an emergency. Under no circumstances should the vehicle be overloaded. All goods should be packed in a safe and secure fashion. Goods projecting at front or rear should be appropriately marked.
- Drivers should be aware of their alcohol consumption and drive well within the legally permitted levels of "blood-alcohol" of the country concerned. Particular care should be taken to ensure that drivers are "legal" and in a fit state to control their vehicle in the morning that follows a previous evening's social drinking. This is particularly relevant in Scandinavian countries, where permitted blood-alcohol concentrations are much lower than in the UK
- Drivers should not wear wellington boots, heavily studded boots or clogs, nor should they drive with bare feet.

- Vehicles must not be parked in areas where there is possible danger from falling rocks or trees, or where they may cause an obstruction. Care should be taken when parking along foreshores or by rivers to ensure that parked vehicles will not be flooded by the tide or a sudden rise in water level. Vehicles should not be driven on to sand or mud or any surface where there is a danger of becoming stuck. When visiting active quarries, drive and park only in specified areas.
- Those carrying out reconnaissance of fieldwork locations in advance of group courses should consider where road transport will be able to stop and/or park to enable passengers to disembark/embark safely.

F. Insurance

The Course Leader must ensure that the University's liability insurances will cover the activities to be undertaken during the course. The owners or occupiers of some sites to be visited may require "disclaimers" or "indemnities" to be signed before permitting groups to have access. Any such requirements should be referred to the University's insurers before they are signed on behalf of the University.

When fieldwork is performed outside the UK, individual participants must ensure that adequate personal insurance is in place to cover medical and other emergencies. Course Leaders must inform course participants of any group insurance cover which has been taken out and make them aware of requirements for any additional personal insurances. If additional personal insurances are required, participants must satisfy the Course Leader that they have taken out necessary additional insurances.

The Course Leader must ensure that any road vehicles are adequately insured for travel outside the UK.

G. Accidents

A comprehensive first aid kit must be taken on every field trip. If the group breaks into smaller groups, a basic kit should be carried by every sub-group working away from the main fieldwork control point. At least one member of staff on every course must hold an in-date HSE approved first aid certificate. (The nature of the location and the type of work being undertaken should be considered when determining the contents of first aid kits and the number of qualified first aiders required.)

When planning fieldwork Course Leaders must consider what might need to be done in event of an accident. If an accident does then occur, there will be clear plan of action already in place to deal with the situation. Matters to be considered include

- provision of emergency equipment
- means of summoning assistance
- evacuation procedures
- contact with the media

Note that in the UK "999" can be used to contact the mountain rescue and Coastguard services as well as the fire, police and ambulance.

Serious accidents should be reported to the School by the quickest possible means. (The University's 24-hour emergency number is 01224-273939). All accidents occurring during fieldwork must be reported to the University Safety Adviser by the School in accordance with University procedures.

No statements concerning an accident should normally be given by those on the course to outsiders or to the media. Any media enquiries should be referred to the University's Public Relation's School.

H. Conduct during leisure time

High standards of behaviour are expected of participants in fieldwork, both during the working day and during leisure periods. All participants are regarded as representatives of the University by local inhabitants and by other people. Any unsociable or offensive behaviour will be interpreted accordingly.

In particular, abuse of alcohol during leisure time on a fieldwork trip is deemed unacceptable behaviour. Course Leaders have the authority of the Head of School to exclude from all or part of a fieldwork course any individual who, in the opinion of the Course Leader, is behaving in an unacceptable manner. Unacceptable behaviour may also result in offenders being excluded from future fieldwork courses.

(Alcohol can impair judgement in the field as much as it can when driving. Consumption of alcohol either in the field or before embarking for the field should be avoided.)

I. Summary of responsibilities for individual fieldwork projects

Individual projects may be undertaken by undergraduate students (as part of an honours course) or by postgraduate students.

Supervisors

Supervisors of students will

- Agree with the student the locations for fieldwork and the activities to be undertaken taking into account the experience and abilities of the student
- Ensure that the student carries out a risk assessment for the work and produces a suitable written summary of the assessment which demonstrates that the student
 - appreciates the dangers which might arise from or during the work
 - understands in sufficient detail the precautions which will be necessary to enable the work to be carried out safely
- Ensure that the student has skills, abilities and access to necessary resources to implement the safety precautions which are required

Students

Students must carry out fieldwork in the manner agreed with their supervisor.

J. Individual fieldwork projects

Disclosure of information

A supervisor can only provide effective supervision of an individual fieldwork project if he/she is made aware of a student's individual circumstances. Students should inform their supervisors of any medical conditions, disabilities or injuries that might affect safety or performance in the field. They should also tell their supervisor about any medical treatment or prescribed medications which will apply during the fieldwork period and which might affect safety or performance. Each student should complete the "disclosure of information form" and submit it to their supervisor before carrying out the risk assessment for their project. Any subsequent changes to the information should be notified to the supervisor.

Planning of individual fieldwork projects

- 1) Students must first have their choice of project approved by their supervisor. If the supervisor does not have adequate knowledge of the area in question, he/she should consult colleagues either in Aberdeen or in other institutions. The agreed choice of area should reflect the capabilities, skills and maturity of the student as well as any known medical conditions.
- 2) When the project location has been approved, a risk assessment should be carried out for the work to be undertaken. The purpose of the risk assessment is to ensure that students:
 - appreciate where the dangers lie in the work they are about to undertake, and
 - understand in sufficient detail the precautions which will need to be taken to ensure that the work is carried out safely.

Supervisors are responsible for deciding to what extent necessary precautions should be committed to writing.

- 3) Student and supervisor should meet and systematically examine the dangers associated with the fieldwork and discuss the precautions which will be required. The checklists forming part of this handbook should be used to prompt the discussion. The supervisor should ensure that the student is aware of other sources of information which might need to be consulted when carrying out the risk assessment. (For example, guidebooks and publications written by those who have previously visited the area.)
- 4) The student should then be asked to write out a summary of the dangers and the precautions which will be necessary to enable the work to be carried out safely. The supervisor should provide guidance on the level of detail required. The School's fieldwork risk assessment form should normally be used unless the supervisor approves an alternative format.
- 5) The supervisor should then review the written record of the assessment. The supervisor must sign the written record before the fieldwork can begin. Both supervisor and student should keep a copy.
- 6) The student must understand that significant alterations in the agreed procedures for the fieldwork must not be introduced (except in exceptional circumstances) without the supervisor's knowledge. When carrying out the risk assessment supervisor and student should recognise that it may be impossible for the student, when in the field, to contact his/her supervisor. The risk assessment should take into account foreseeable circumstances which might require the student to make changes to the scope of the project.

Before departure for the field

- 1) Supervisors should ensure that students have taken out adequate insurance cover for any fieldwork being performed outside the UK. Cover for rescue, medical treatment and emergency repatriation is particularly important.
- 2) Supervisors must obtain from each student details of a responsible person (e.g. close friend, parent or other relative) whom the School could contact in an emergency. They should also obtain confirmation that any medical information disclosed is up to date. Supervisors should also obtain from each student an outline of the student's expected itinerary. All this information should be passed to the School Office where it will be held for use in an emergency.

While working in the field

- 1) Students must carry out fieldwork in accordance with the safe working procedures agreed with their supervisor.
- 2) On arrival in their field area students must find out whom to contact in the case of emergency, and the name and location of the local doctor or clinic. In the case of a student with a known medical condition working abroad, it is prudent to carry a doctor's note about that condition, translated into the local language.
- 3) Before commencing fieldwork an initial reconnaissance should be made of the area. If students will be working alone but in adjacent areas, they should consider making this reconnaissance of their respective areas together.
- 4) Students must remember that while they are in their fieldwork areas, they represent not only the School and the University, but the scientific community as a whole. Local customs and traditions must be respected. Goodwill engendered locally may prove to be beneficial to the project and is certainly much better than antagonism and animosity.
- 5) When working alone in the field, students must always carry safety equipment as agreed with their supervisor.
- 6) Each day before leaving his/her field base, each student must leave a note with a responsible person (hostel warden, farmer etc.) describing precisely where he/she is going on that day (name of locality and approximate grid reference), the route and the expected time of return to base (E.T.A.). Students working in pairs from the same place can cover for one another; but it is still advisable to leave a message with a local person in case both are involved in an accident. It must be made absolutely clear to the responsible person entrusted with these details that emergency services must be alerted if the fieldworker(s) fail(s) to return within 2 hours of their E.T.A. Once such an arrangement is made, a student must not unilaterally break it by, for example, going home for the weekend, changing location or deciding to work late. If a vehicle is used for fieldwork, a dated note indicating the work area and E.T.A. for that particular day may be left in the vehicle. Students should however consider carefully the extent to which such action may invite attempts to break into or steal their vehicle.

K. HAZARDS IN THE FIELD

K.1 Areas of low to moderate relief

- (a)** Before setting out obtain a local weather forecast from a reliable source
- (b)** Always ensure that someone knows, or can easily find out, where you are working and when you expect to return. A note of your anticipated return time is preferable to oral information, and should be backed up by written instructions for alert procedures, in case you become seriously overdue. It is recommended that relevant information be displayed in or on your vehicle (if one is in use) as an additional safety precaution, providing that this is not likely to attract the attention of thieves or vandals. Whatever system is used must be cancelled when the fieldwork is completed.
- (c)** Always be suitably clad for the local terrain and for the possible extremes of weather in the fieldwork area. Carry a reserve of warm clothing (including head gear) and high energy emergency food rations as an aid to survival. In remote or exposed areas always carry a survival bag and use it to counteract the effects of exposure if incapacitated, or marooned by fog or nightfall.
- (d)** Minimal clothing may be permissible in stable conditions of warm weather, so long as the hazards of sunburn and heat-stroke are borne in mind. However, both warm and weather-proof clothing should be carried even if not worn.
- (e)** Footwear should be suitable for the terrain. In most cases good, strong walking boots are the best footwear. Well-fitting wellington boots may be preferable for some conditions (e.g. shoreline or stream work). Whatever the type of footwear, ankle support and good treaded soles are essential as slips may occur on any muddy or rough ground.
- (f)** Always carry an appropriate detailed topographic map (at least one to each group) and a compass. Know how to walk a compass bearing; always carry a whistle and (during the darker months) a torch with spare bulb and batteries. Know the appropriate distress signals for use in emergency.
- (g)** Always carry a first aid kit in a group or have one readily available.
- (h)** Avoid machinery whether in use or not. Enquire about, watch out for and avoid potentially dangerous animals. Take particular care to avoid toxic liquids e.g. those used for crop spraying.
- (i)** Always move carefully over rough, rocky or vegetation-covered ground, avoiding loose boulders, burrows, etc. Take care not to dislodge loose rocks or other objects. If you do, then shout a warning to those who may be below. Under no circumstances must stones or rocks be rolled or thrown down hillsides or over cliffs.
- (j)** Take particular care in areas of land fill, tips and spoil heaps, where uneven compaction may lead to instability. Look out for, and avoid, weakness resulting from underground combustion and avoid any toxic substances that may be present.
- (k)** In areas where game shooting takes place, wear high visibility clothing. Find out when and where organised shoots are taking place and plan accordingly. For these areas, liaison with the landowners is essential and permission must be sought where necessary.
- (l)** Those working among or near dry vegetation, such as gorse or dead bracken, must not smoke or undertake activities that are likely to cause fires. All objects that might subsequently cause fire, such as glass, should be removed from the site.
- (m)** Protective headgear must be worn where there is a danger of falling stones. This should be an approved type and be in-date. Remember that you will not be protected from a large boulder fall.

K.2 Mountains and uplands

These procedures are to be observed in addition to those given above for areas of low relief.

In all cases these regions are to be regarded as hazardous, except for public roads and inhabited parts. Certain parts will more properly be defined as dangerous, notably areas where there is steep or loose rock, or a layer of ice and/or snow. In an area regarded by the Course Leader as dangerous, participants must work at least in threes and groups must never allow one or two persons to split off from the party. A dangerous area requires a high level of appreciation of the risks and dangers involved and the level of care to be exercised. Any small group moving more than a short distance from the main party, or working consistently out of sight, should be regarded as a separate group.

(a) Weather Conditions

Weather conditions can change quickly; what may start as a pleasant stroll on a fine day along a well-trodden path can turn into a battle against a blizzard. In winter-time the chances of this happening are much greater; the well-trodden easy path of summer-time may become a treacherous sheet of ice in winter.

Weather conditions on British mountains (especially in winter) can be just as severe, and often more changeable than those encountered in higher Alpine terrains. It is thus safer to be prepared for the worst conditions that may occur. Do not hesitate to turn back if the weather deteriorates or if the route or conditions are too much for anyone in the group. Always obtain a weather forecast from a reliable source before setting off for mountainous or upland areas.

Never be deceived by a mild valley breeze. Climb only 1000 ft and, at any time of the year, it can become an icy, piercing gale force wind.

(b) Poor visibility

Poor visibility caused by heavy rain and/or thick cloud can easily lead to the fieldworker being 'benighted'. When visibility is poor you should constantly refer to your compass and make progress cautiously. If you are on a path, follow it carefully and watch out for cairns. Take every opportunity to sight on an identified object. Stop frequently if you have to travel on a compass bearing, each time taking a sighting on an object ahead (an alternative is to send a companion ahead of you twenty metres or so at a time). Sightings should be made whilst stationary. Remember also that it is easy to lose all sense of time on a long walk, so carry a watch and allow plenty of time to finish your expedition in daylight.

(c) Electrical storms

Electrical storms (as opposed to thunder storms) do not occur frequently in the British Isles but it should be borne in mind that electrical potential will be attracted to ridges, summits and other high points, and it is advisable to keep below them during a storm.

So if you suspect that an electrical storm is imminent, take precautions quickly and get as far down the mountain and away from exposed ridges as possible. Sit yourself with knees drawn up and feet together on dry clean rock. If you have a rope or insulating clothing, sit on this.

Avoid caves and dirt-filled crevices. Don't sit under trees or in small hollows. Choose an area well away from walls and sharp projections.

(d) Equipment and clothing

Wear boots (not shoes, wellingtons or trainers)

Have plenty of warm clothing (including spare dry clothing) and rain-proof outer garments (including over-trousers). Never wear jeans either in winter or in summer. When wet, jeans will provide little or no protection against the cold.

Always carry a map and compass and know how to use them. Also carry a watch, whistle and torch. Carry a first aid kit and an emergency supply of high energy food. (Keep the high energy food for an emergency, not for a snack.)

Do not venture onto snow or ice without having ice axe and crampons and experience of using them.

(e) River Crossings

Heavy rain may cause flooding and make streams rise rapidly into dangerous torrents, sometimes washing away bridges, parts of footpaths and covering fords. Do not attempt to cross such streams in spate. River crossings are not to be undertaken lightly and if there is any doubt at all either (i) MAKE A DETOUR or (ii) WAIT until the spate or flood subsides.

If the occasion arises in which it is decided that the crossing of a river in normal flow is the safest of several alternatives, then it is best to follow the procedure set out below:

- a) Remove trousers to reduce friction or drag. They can be put on dry at the other side.
- b) Wear boots when fording a river. Socks should be taken off and put on dry at the other side.
- c) Undo the waist band of pack/ruck-sack and loosen shoulder straps for quick off-loading. Empty tins and closed polythene bags should be placed at the top of the pack to provide buoyancy.
- d) If possible obtain a branch or pole to provide a "third leg".
- e) Attach a rope (if available) to a secure anchor point away from the river bank. Each individual making the crossing should be attached to the rope, thus forming a safe link with the group on the banks of the river.
- f) Alternatively the party should cross by linking arms, facing alternate directions and moving across close together. Use short shuffling steps and cross on a diagonal path. Do not jump from boulder to boulder.

K.3 Woods and forests

The main safety hazards in woods and forests are associated with the difficulty of movement and limited visibility. It is easy to become lost; so if you do have an accident, it may be difficult for you to be found or for you to find the way out.

- a) Always bear in mind that work in woods and forests is commonly more tiring than elsewhere, and plan your work accordingly.
- b) Always notify the local gamekeeper, forestry officers or other responsible persons of your presence, probable location and work schedule.
- c) Try to keep your position continually in mind. If you do become lost, back tracking is generally more helpful than carrying on in the hope that things will improve. A map of the district and compass should be carried at all times.
- d) Try to avoid areas where growth is dense and the nature of the ground and any obstructions or holes are obscured, also watch for whiplash of branches.
- e) Rocks and boulders and fallen trees in forests frequently bear a covering of moss and are slippery when wet. Screes in forests should be avoided whenever practicable.
- f) If climbing steep slopes, take great care not to rely too heavily on vegetation for support, it may not be as firmly fixed as you hope.
- g) Do not smoke at times of high fire risk, or as decreed by local forestry regulations. Smoking is not recommended in forested areas. Also take care not to leave anything that might start a fire - glass for example.

Note: If possible, avoid passing through dense plantations of young trees; they are very susceptible to damage.

K.4 Bogs, mires and swamps

Of the several types of wet unstable ground likely to be encountered, those in which a raft of vegetation overlies water are perhaps the most dangerous. These can usually be distinguished by their swaying movement when walked on. Any continuous carpets of sphagnum or peat mud should also be avoided. Reed-swamps are difficult to traverse on foot and care should be taken. Probe ahead with a pole or auger.

- a) Do not attempt to cross a bog of any type if you are alone.
- b) If it is essential to cross a bog, try to keep to the drier upstanding parts, preferably to any tussocks of grassy plants, and avoid unvegetated areas.
- c) If you find yourself sinking, immediately lie flat on your back, and call for assistance; keep calm; if possible free your legs and feet to the horizontal. If you are carrying a survival bag or other inflatable object try to inflate it to give you buoyancy. Even a plastic bag or waterproof garment may be used to trap air and so provide limited support. Still lying flat, move back in the direction of your approach using any tussocks for support.
- d) If you become immobilised try to get behind some vegetation for shelter, put on spare clothing and use a survival bag.
- e) Extra precautions should be taken during prolonged spells of hot dry weather when fire becomes a potential hazard even in bogs.

K.5 Estuaries, mudflats and saltmarshes

Careful preparation is important before undertaking work in these areas. The period available for work is usually limited by the tides and knowledge of the state of the tide and of the time is essential. Because of the time limitation the dangers of becoming lost or sustaining accidents or injury during the work are greater. Unless there is a practicable alternative, fieldwork should not be carried out alone in these environments. Local exceptions may be made where work is confined to the bank.

- a) Always carry a map and a compass in case mist or fog develops suddenly and obscures the shoreline. It is particularly important that the party stays together.
- b) Estuaries, mudflats and salt-marshes are, in general, very exposed and can be very cold; the limitations on working time, due to tides, may also result in work having to be carried out early in the morning or late in the evening.
- c) Knowledge of the day's tides is essential but allowance must also be made for local conditions and changes in the weather, *e.g.* a change to an on-shore wind can bring forward the time of high tide. When the terrain is flat the tide advances quickly and work should be planned to allow ample time for exit before the flood tide starts to advance across the work area.

K.6 Quarries, cuttings and cliffs

Note that, in the accidents league, quarry workers come 3rd (after deep sea fishing and mining). Accidents that are the sequel to a disregard of warning or safety notices count for about 25% of the total.

Responsibilities of the Course Leader

- a) If visiting a working quarry, first obtain permission from the quarry manager in advance. Be sure to agree:-
 - (i) the date of the visit and time of arrival
 - (ii) the number of visitors.
- b) Ensure that all students are wearing protective safety helmets and, if appropriate, safety goggles. Students not wearing a safety helmet must not be allowed to approach the rock face.
- c) Report the group's arrival and departure to the quarry manager.
- d) Enquiries must be made through the quarry management about the locations of specific hazards to be avoided.
- e) Make sure that students are aware of appropriate emergency procedures.
- f) Make a preliminary check on the stability of clay cliffs and sides of claypits or any other questionable slopes or scree.

Responsibilities of Students

- a) Obey all safety instructions given by the Course Leader or supervisors. Anyone not conforming to the standard required may be dismissed from the field course.
- b) Stay with the party, except by arrangement with the Course Leader.
- c) Wear suitable footwear *i.e.* strong boots. Note wellington boots are suitable only for clay pits and similar environments.

- d) A safety helmet must be worn when visiting mines, quarries, cliffs, scree slopes or wherever there is a risk from falling objects.
- e) Safety goggles must be worn when hammering or chiselling rock. Avoid hammering near another person, or looking towards another person hammering.
- f) Avoid, where possible, the edges of cliffs, quarries and other steep or sheer faces.
 - Ensure that rocks above are safe before going below.
 - Never work under an overhang.
 - Avoid loosening rock on steep slopes.
 - Do not work above another person.
 - Do not roll rocks down-slope for amusement.
 - Do not run down steep slopes.
 - Beware of landslides on clay slopes.
- g) Keep a sharp lookout for moving vehicles or machinery. Never pick up explosives or detonators. If found, inform the Course Leader immediately. Comply with safety rules, blast warnings and any instructions given by leaders. Beware of sludge lagoons.
- h) Beware of traffic when examining road cuttings. Avoid hammering, and never leave debris on the roadway or verges. Railway or motorway cuttings must never be examined, unless special permission has been obtained from the appropriate authorities.
- i) Do not enter old mine workings or cave systems unless approved as an essential part of the work. Only do so by arrangement, and never alone. Ensure that someone on the surface knows your location and expected time of return. Be sure to report after returning.
- j) Do not climb cliffs, rock faces or crags, unless this has been approved by the Course Leader as an essential part of the work.
- k) Take great care when walking over rocks below high water mark on rocky shores and have adequate information on tides.

K.7 Beaches and cliffs

Responsibilities of the Course Leader

- a) Check in advance for potential hazards along the route. A reconnaissance trip is strongly advised, especially to look for areas of quicksand or unstable cliff.
- b) Know signs of hypothermia and exhaustion and be familiar with treatment. Remember an open beach on a windy day may be almost as severe an environment as a mountain top might be in spring or summer.
- c) Check local tidal conditions, especially time of high tide and tidal range.
- d) When working on cliffs, make sure students adhere to instructions laid out in the Section on “Quarries, cuttings and cliffs”.

Responsibilities of Students

- a) Follow the instructions of the Course Leader.
- b) At all times, when working on cliffs adhere to instructions laid out in the Section on “Quarries, Cutting and Cliffs”.

- c) Do not leave main groups unless with express permission of the Course Leader.

K.8 Excavations

From time to time during fieldwork it may be necessary to dig large holes or trenches. Before any digging begins, obtain the permission of the owner of the land and make sure that he/she understands what you intend to do.

There is almost no ground which will not collapse under certain conditions. If the sides collapse anyone in the excavation could be partially or completely buried under very heavy material from which they may find it impossible to escape. Death can often be the result of such an accident. If there is any doubt at all about the safety of the sides of a hole/trench, the sides must be physically secured. Any excavation deeper than 4 ft must have the sides secured regardless of the condition of the ground if anyone intends to go into the excavation. Expert advice should be obtained on the best method of securing the sides of an excavation.

In populated areas and near to roads the location of underground services (e.g. electricity, telephone, water, gas) should be established before the ground is disturbed. Utility companies and local authorities should be consulted for information.

K.9 Railways, roads and motorways

You must obtain specific permission before conducting any work on or beside railways and motorways. You must comply with safety regulations laid down by the railway or road authorities. Never use railway tracks as footpaths.

You do not need permission to work on or alongside roads other than motorways but for safety purposes you should treat all roads with great care. Wear a high visibility jacket. Display a clear warning signal when you are working near bends, hill crests or in narrow cuttings and employ a lookout if this is feasible. Avoid road tunnels lacking a footpath if possible, but if such work is essential, post a lookout and prominent warning signals or signs at least 100 metres ahead. Be extra careful if there is a strong wind blowing because it can mask the sound of approaching trains or vehicles.

K.10 The marine environment

Fieldwork safety assumes an added significance for field situations afloat, particularly those in tidal waters. There are high risks of drowning or from immersion in very cold water (possibly resulting in hypothermia or exposure before a person can be given proper shelter and care).

An experienced person should always be in charge of the party in tidal and fresh water environments. Solo work should be discouraged. No person should be allowed to go out in a boat without preliminary instruction in basic boatmanship.

The number of persons to be carried in each vessel should be known and should not exceed safe capacity limits of the vessel concerned. Trips should always be sanctioned by the Course Leader and it should always be made clear who is the one person in charge of the boat whose orders are absolute.

Boats

Course Leaders shall ensure that boats are only taken out by persons authorised to do so by the Head of School. All persons so authorised must be experienced in handling the type of boat concerned, be familiar with the conditions likely to be encountered and be acquainted with emergency and safety procedure at sea or in inland waters as appropriate.

No boat may be taken out single-handed unless it is unavoidable and the person concerned is fully experienced.

The authorised person shall obtain a weather forecast, notify the Course Leader of the destination, list of persons, purpose of trip, time of departure and expected time of return and must also report their return.

The Course Leader must be satisfied that all the boats are in a seaworthy condition and that safety precautions are being followed before using them.

All persons using small craft must wear an approved life jacket or buoyancy aid as appropriate.

Tides

It is necessary when going on the sea to know about tides and times of movements. Even where a boat can be put into the water at any state of the tide, the direction of tide flow along the coast will depend on whether it is rising or falling.

Clothing

It should be remembered that it is nearly always colder on water than ashore, and due allowance made for this.

The effects of hypothermia are less obvious if a person affected is sitting still in a boat; under these circumstances the only signs of hypothermia may be listlessness and lack of co-ordination.

Good waterproof clothing should be worn, including headgear, as this will usually be necessary to keep out the wind. Nobody should be allowed to go out in a boat unless properly clothed in the opinion of the person in command. For prolonged work, a wetsuit is a desirable safety measure.

Lifejackets

Ability to swim is not a substitute for a lifejacket. Orally, or part orally, inflated life jackets should be avoided. It is generally very difficult (for some people impossible) to inflate an empty lifejacket in the water. Immersion in cold waters always causes a certain amount of shock. Unintended immersion in the water is usually the result of an accident of some kind; the immersed person may thus be stunned or unconscious and will be unable to inflate a lifejacket fully at a time when it is most needed.

Capsize

If you capsize the boat away from the shore, stay with the boat. Do not exercise to keep warm as this increases heat loss and wastes energy, increasing the effects of hypothermia. A whistle on a lifejacket could be useful.

K.11 Exposure and hypothermia

Exposure

For those who disregard precautions, the onset of bad weather can lead to acute physical discomfort, disorientation, growing fear, exhaustion and even collapse. In general, warm, windproof and waterproof clothing should be worn with adequate protection for those parts of the body where heat loss is greatest (*i.e.* head, ankles, wrists and hands). British weather is notoriously unpredictable; the effects of wind (windchill, buffeting, discomfort and disorientation in wind-driven rain / snow) are potentially hazardous and should not be underestimated, particularly in and around coastal waters and on high mountains or open upland.

Hypothermia

Apart from falls, drowning etc. the most serious hazard that can occur in field activities is hypothermia. This is caused by the exposure of the body to progressive cooling as a result of severe weather conditions. It can occur at any time on the hills or seas of the British Isles and anywhere during the winter months. Unless the symptoms are recognised and preventative action taken immediately it can rapidly develop into a life threatening condition.

The symptoms are:-

- a) A slowing down of pace or effort, which may alternate with sudden outburst of energy
- b) Aggressive response to advice or counsel
- c) Abnormality of vision, stumbling and slurring of speech
- d) Shivering and tiredness

If the victim is urged to greater effort or left unprotected, the consequences can be serious.

Action to be taken:-

Stop and find the best available shelter out of the wind. Insulate the casualty against further heat loss until help can be obtained. This can be done with additional clothing (even over wet garments), or a large plastic bag (a survival bag) which should be pulled up over the victim and tied at the neck. Get help quickly.

Some field studies are carried out on water where similar severe exposure can be experienced. The temperature of open waters in and around Britain is rarely high enough to be sure that total immersion will not be accompanied by some degree of shock. Water displaces the insulation layer of air between the body and clothing and may lead to hypothermia. Immersion in water below about 22°C accompanied by physical effort is likely to increase the net heat losses from the body, as can winds or wet clothing. It is important to avoid total immersion (unless diving) and to keep clothing dry and windproof.

It is recommended that if at all possible a warm sweet drink be given to the victim. Under no circumstances should alcoholic beverages be given.

K.12 Biological hazards

There are many species of plant, animal and aquatic life that present a health hazard to humans (e.g. bites and stings etc.) and should be avoided. An ability to recognise the dangerous/poisonous species indigenous to the particular fieldwork environment is therefore desirable.

Of potential health hazards, bracken, toxic blue-green algae and certain zoonotic infections are most likely to be encountered in the British Isles. Zoonotic infections are animal diseases that are transmissible to humans. Although they are rare, care must be taken when work is closely associated with animals. Personal hygiene is an important deterrent in most situations. Normally there should be few problems but two diseases are becoming more common, Leptospirosis and Lyme Disease

All fieldworkers should ensure that anti-tetanus injections/boosters or other necessary vaccinations are up to date. Those travelling outside the UK should find out well in advance which vaccinations are recommended and ensure that they are administered. At the same time fieldworkers travelling overseas should find out what other health precautions will be required (e.g. protection against malaria).

Leptospirosis (Weil's Disease)

This is a potentially life-threatening illness caused by bacteria passed from rats via urine. Those at risk are those who handle rats or come into contact with material or water which has been contaminated by rat urine. The risk from water contact is greatest in static water or slow flowing rivers.

The micro-organism may enter the human body through abrasions or cuts in the skin and through the lining of the nose, mouth and eyes. The micro-organism can survive for considerable periods outside the host in the environment.

Symptoms

The disease starts with a flu-like illness and there may be a persistent and severe headache. Symptoms may also include vomiting and muscle pains. Pneumonia and kidney failure may follow. If caught in the early stages, the disease is usually readily treated with antibiotics. If left untreated, it can be fatal.

At risk activities

- Work connected with rats or rat urine (voles can also be a source of the disease)
- Contact with water contaminated by rat urine - mainly static water or slow flowing rivers
- Contact with feed stuffs or other material contaminated by rat urine in storage areas
- Canoeing in ponds, lakes and slow flowing rivers
- Fish farming (where rats are often present)

Prevention

Avoid rats. Don't touch them with unprotected hands.

Cover all cuts and broken skin with waterproof plasters (before and during work) and wear protective clothing.

Wash your hands after contact with animals, or any contaminated clothing or other materials, and always before eating, drinking or smoking.

Treatment

Report any illness to your doctor. Tell the doctor that you are a fieldworker and tell him about the sorts of environments in which you have been working. Tell him that you think you might have contracted Leptospirosis.

Lyme Disease

This is a tick-borne infection from sheep, deer and other animals which although still uncommon, has been an increasing problem in late summer on areas of heath and rough pasture. It is transmitted when a tick bites an infected animal and later bites a human. See a doctor if you think that you have been infected.

Symptoms

A faint red ring may develop around a bite, and there may be associated headache, fever and/or muscle pains. The ring increases in diameter over several weeks as the centre clears. The disease can cause serious illness of the nervous system, joints or heart.

At risk activities

Any activity in which workers are exposed to tick bites (e.g. agriculture, forestry, land management). Especially at risk are those working in woodland and grassland areas harbouring ticks.

Prevention

Avoid exposure to ticks by covering exposed skin, especially legs (e.g. by closing trouser bottoms by tucking into socks). Application of insect repellent to skin or clothing may also help. Inspect clothing for ticks. At end of activity undress and inspect body for ticks. Remove any ticks as soon as possible

Treatment

Report any illness to your doctor. Tell the doctor that you are a fieldworker and tell him about the sorts of environments in which you have been working. Tell him that you think you might have contracted Lyme Disease

(Note: The name of the disease originates from the town of Lyme in Connecticut, USA where the disease was first detected.)

Bracken

Bracken is known to be toxic and carcinogenic to livestock. Avoid cutting, handling or working with bracken. If bracken is handled, wash thoroughly before eating, drinking, smoking or applying cosmetics.

Toxic Blue-Green Algae

This is common in many inland waterways. The algae multiply rapidly (especially in summer) to colour the water green, blue-green or brown. Avoid contact with, or ingestion of, water that contains high concentrations of these algae.

The symptoms due to ingestion are vomiting, diarrhoea, fever and flu-like symptoms. The symptoms due to other contact are skin irritation and rashes

Therefore, avoid contact through the use of protective clothing and gloves. Wash thoroughly or use cleansing wipes to remove splashes.

K.13 The international distress signal

The international distress signal is six whistle blasts, torch flashes, shouts or waves of a brightly coloured cloth with a gap of one minute between each repetition. Acknowledgement of this signal is three whistle blasts etc.

K.14 Food

Tiredness in the field, which is often a precursor to accidents, can often be directly due to or be exacerbated by lack of food. Energy expenditure in the field can be twice an individual's daily norm. It is important therefore to eat sufficient food.

A substantial breakfast is a very sensible way to start a day in the field. Not only will it help prevent the tiredness which can lead to accidents, the energy reserves it provides can be extremely useful in an emergency situation.

In remote locations always carry an emergency supply of high energy food and keep the food for an emergency - not for a snack. (Your objective should be, if at all possible, to return to base with the emergency food supply untouched.)

L. Checklists

General

- Appointment of Course Leader
- Travel arrangements and transport in the field area
- Current Foreign Office guidance for overseas locations which will be visited
- Reconnaissance visits
- Permission to access site and work on site
- Provision for disabled fieldworkers (if necessary)
- Accommodation and catering
- Insurance

People

- Staffing levels, size of group(s) and staff/student ratios
- Appointment of Deputy Leader
- Leaders of sub-groups
- Unambiguous command structure
- Staff with particular responsibilities
- Need for staff with technical skills
- Language skills/interpreters
- Qualified first aiders
- Qualified drivers

Training

- Navigation
- First aid
- Languages
- Interpersonal skills
- Hygiene/health education
- Specific skills (chain saw, use of ropes etc)
- Conduct on boats
- Use of machinery and vehicles

Health

Vaccinations
Other health precautions (e.g. malaria)
First aid supplies and equipment
Local medical assistance
Medical conditions of participants which require special provision

Physical hazards

Expected weather conditions
Extreme weather conditions
Upland areas, mountains, cliffs
Glaciers, crevasses, ice falls etc
Rivers, lakes
Bogs, mires, swamps
Quarries, cuttings, cliffs
Excavations
Woods, forests
Estuaries, mudflats, saltmarshes
Sea and seashore
Roads, motorways
Railways

Biological hazards

Venomous, lively or aggressive animals
Poisonous plants
Infectious micro-organisms (Tetanus, Leptospirosis, Lyme Disease etc)

Chemical hazards

Agricultural chemicals and pesticides
Chemicals to be used during fieldwork

Man-made hazards

Machinery and vehicles
Power lines and pipelines
Electrical equipment
Insecure buildings
Slurry and silage pits
Attacks on the person or on property
Military activity

Environmental disturbance

Pollution arising from fieldwork activities
Disturbance of eco-systems
Waste minimisation and disposal of waste

Local base

Arrangements to notify daily itinerary
Arrangements to initiate a search if overdue on return
Medical assistance
Arrangements to obtain local weather forecast

Communications

Routine communication
Emergency communication

Emergency planning

Foreseeable emergency situations
Equipment for use in an emergency
Means to summon assistance
Evacuation of casualties
Interface with the emergency services
Contact with the School in Aberdeen
Contact with the media

Essential equipment

Rucksack
Warm clothing
Warm head gear
Waterproof clothing
Boots or other suitable footwear
Protection from the sun
Watch
Map/compass
Emergency food
Survival bag
Torch and spare bulb/batteries
Whistle
Matches
First aid kit
Hard hat

Lone working

Is lone working avoidable?
Is it reasonable for lone working to be undertaken?
Means to notify itinerary and initiate search if overdue
Hostility of location
Experience and capabilities of worker
Means of communication with worker
Emergency arrangements
Restrictions on activities
Other lone workers in adjacent areas

Prior to departure from Aberdeen

Disclose of information from course participants
Notification to School Office of information about course and participants

Before going into the field

Weather forecast
Itinerary and return times notified to local base
Permission to access field locations
Group briefed on locations to be visited
Individuals in group correctly equipped

Road transport

Appropriately licensed drivers

Insurance cover including insurance for private vehicles

Small Bus Permit

Driver in charge of each vehicle

Vehicle maintained

Vehicle correctly loaded

Sufficient spare parts

Daily checks (Windscreen, wipers, lights, mirrors, number plates, speedometer, warning lights, brake fluid, exhaust, fan belt, seat belts, hoses, jack/wheel brace, fire extinguisher, first aid kit, brakes, handbrake, oil leaks, fuel)

M. Forms

- Disclosure of Information Form
- Fieldwork Risk Assessment Form
- Hazards Assessment Form
- Safety Plan for Field Survey and Engineering Hydrology Field Course (EG 3723)

UNIVERSITY OF ABERDEEN

DISCLOSURE FORM

SCHOOL OF ENGINEERING

FIELDWORK LOCATION: Kindrogan Field Studies Centre

DATES: Week 38 26 March 2012 - 30 March 2012

CONFIDENTIAL

Disclosure of information

Student Name	
--------------	--

Emergency Contacts Name(s) _____ _____ Telephone _____	Address _____ _____ _____
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Medical conditions, disability or injury that may affect safety or performance in the field	List any current medical treatment or prescribed medications that apply for the fieldwork period which may affect safety of performance in the field
--	---

Special dietary requirements, including allergies
--

Signed _____

Date _____

FIELDWORK RISK ASSESSMENT FORM

SCHOOL OF ENGINEERING

Name of fieldworker:

Names of other persons who will accompany the fieldworker in the field
University of Aberdeen staff members on a rota basis. My team members.

Location of work: Kindrogan Field Studies Centre, Enochdhu, Blairgowrie
Perthshire PH10 7PG. Field grounds of the Centre and nearby stream/s.

Purpose of work: to provide students with the basic practical skills required in land
surveying and engineering hydrological practices.

Intended start/finish dates

Week 38 26 March 2012 - 30 March 2012

Hazard identification:

Hazard identification - Describe those aspects of the work that could create significant risks and the precautions which will be implemented. Describe any lone working which will be undertaken and special precautions which will be taken.

1. Carrying surveying equipment: While carrying ranging poles, theodolites and any other surveying equipment I and my team members should keep well clear of power lines. Do not hold long items, such as staffs, range poles, etc., horizontally as sudden turning movements could cause an injury to someone nearby, or damage windows or other property. I and my team members should assess loads to be carried and distribute the weight accordingly, taking care not to overload any team member as well as carrying in an appropriate manner so as to avoid injury.

2. Engaged in the hydrological exercise: I and my team members should take care on and near the stream bank. Extra care will be taken when measurements are carried out in the stream. Safety-jackets will be worn during exercise close to the stream, and a whistle may be used to summon help.

3. Walking from one field to another. Any fences should not be climbed over, but gates used at all times. Obey all road traffic, pedestrian and passenger regulations.

4. I and my team members will not leave Kindrogan Field Studies Centre without relevant staff members' permission. Extra care will be taken during any lone working within the centre grounds especially during evening/dark hours.

Lone working considerations:

Field work will be undertaken by a team of students. Each team consists of 4-5 members.

Through MyAberdeen for EG3723 I have been supplied with the "Fieldwork-Safety-Handbook-2012" and associated forms. I confirm that I have read these documents carefully, understand their contents, agree to follow the advice and instructions on fieldwork safety given, and accept the implications and requirements expected from me.

Prepared by (*fieldworker*) _____ Signature _____ Date _____

Approved by (*supervisor*) _____ Signature _____ Date _____

HAZARDS ASSESSMENT FORM

Surveying and Hydrological fieldwork are outdoor activities that always involve the risk of personal accident or injury. It is important to take a positive attitude towards preventing accidents and reducing risks to a minimum. You must therefore:

- *Know the hazards that you face and how to avoid them*
- *Obey leaders' instructions and follow proper procedures*
- *Use protective equipment whenever necessary*
- *Always ask if you are in doubt*

The main hazards associated with EG3723 Field Survey and Engineering Hydrology Field Course are those concerned with:

Weather Be prepared for cold, wet and windy conditions.

Terrain Be prepared to walk over steep slopes, rocky river beds with large, slippery boulders and loose gravel materials. Be prepared to traverse steep slopes and cliff sections that comprise a mix of rocky and vegetated surfaces.

STUDENTS

It is your responsibility to be clad in appropriate clothing and footwear! You must wear warm and waterproof clothing, gloves and headgear. You must wear waterproof boots or wellingtons with soles that provide good support and grip on steep, irregular and slippery surfaces.

It is not possible to cover or specify here every possible risk or individual circumstance, so use your *common sense* to avoid risks and minimise potential dangers *both to yourself and other members of the party*.

SPECIFIC HAZARDS

- Avoid the edges of cliffs, quarries and other steep or shear faces.
- Do not go too near the edge of river banks or coastal platforms, where you may risk immersion or drowning under large waves or surges.
- Avoid waterways under flooding conditions.
- Do not throw or roll rocks or debris over cliff edges or down steep slopes.
- Do not run down steep slopes.
- Do not push or attempt to trip another person (even in jest).
- Take care when negotiating wet, irregular, slippery or steep surfaces, especially if they are covered with loose debris.
- Advise the party leader of any student who appears unwell or exhausted.
- Do not wander away from the party group.
- Obey all road traffic, pedestrian and passenger regulations.
- Inform the party leader of any medical condition or medications used, that may affect your performance on the field course.

I have read the above information and understand and accept the implications and requirements expected from me.

Signed _____ Date _____

Safety Plan for EG3723 Field Survey and Engineering Hydrology Field Course

1. Pre-field trip information

- ***The Fieldwork Safety Handbook*** (<http://www.abdn.ac.uk/engineering/about/handbooks>) will be consulted prior to the trip and a copy will be taken with the party. The handbook describes how the School of Engineering gives practical effect to the health and safety commitment. Compliance with the requirements and procedures in the handbook is mandatory for all staff and students in the School. The handbook includes the following forms: ***Disclosure of information; Fieldwork Risk Assessment and Hazards Assessment.***

The forms are issued to all students registered for a course before the field trip. ***The students are required to complete, sign and submit all three forms to the Engineering office prior to the trip.*** Students who do not complete and submit all three forms to the Engineering office will not be allowed to attend the field trip. The forms include the following information:

- ***Disclosure of Information form.*** This asks for (a) “medical conditions, disability or injury that may affect safety or performance in the field”; (b) “current medical treatment or prescribed medications that apply for the fieldwork period and may affect safety of performance in the field”, and (c) “special dietary requirements, including allergies”. It also requires that an emergency contact is provided.
- ***Fieldwork Risk Assessment form.*** This form includes the main course details and potential hazards. All students are required to confirm that they read and understood the Fieldwork Safety Handbook.
- ***Hazards Assessment form.*** This form includes the main and specific hazards associated with EG3723 Field Survey and Engineering Hydrology Field Course.
- Students are required to bring waterproof outer clothing (including a hat, gloves, woollen socks, etc.) and stout walking boots.
- Students are covered by the University insurance policy, but they are invited to take out their own policy if they wish.
- Engineering Office appraised of the following information before departure:
 - ✓ List of students and signed copies of all three forms, i.e. Disclosure of Information; Fieldwork Risk Assessment and Hazards Assessment forms.
 - ✓ Staff rota. Staff mobile/phone and emergency contact details. Staff medical and dietary requirements.
 - ✓ Itinerary (Kindrogan Field Studies Centre: <http://www.field-studies-council.org/kindrogan/> Tel: 01250 870150 Fax: 01250 881433)
 - ✓ Details of transport to be used and registration numbers of vehicles.

2. Travel to and from the Kindrogan Field Studies Centre

- Well maintained vehicles are hired: one minibus/van (Arnold Clark hired vehicles insured by University) and one coach (Whites Coaches).
- Experienced, registered drivers (who must have passed the defensive driving course).
- If minibuses used, they should be 15-seater vehicles limited to 12 people plus personal luggage (surveying equipment is to be transported separately).
- Limit on driving time (8 hours).
- Seat-belts are to be used.

3. Safety at the Kindrogan Field Studies centre itself

- Leaflets of 'University student info' and 'Information for Group Leaders' are issued to students before the field course via MyAberdeen. This is reinforced on arrival, particularly safety during a fire.
- Kindrogan centre staff members inform the students and visiting staff of relevant Health & Safety issues at the beginning of the course. Kindrogan centre staff present a compulsory induction lecture on the day of arrival.
- Many mobile phones do not receive a signal around Kindrogan – Vodaphone and O2 are the most reliable.
- At least one member of staff will have a current first aid certificate.
- Safety and first aid equipment is taken on the field trip.

4. General safety rules

- Safety rules and procedures will be presented to the students before the start of the course. The rules and procedures are to be obeyed and followed.
- The students will sign a form to say that they have read the information and 'understand and accept the implications and requirements expected from me'.

5. Safety during exercises in the grounds

- Safety is emphasised at all times, especially when:
 - ✓ Carrying ranging poles, theodolites and any other surveying equipment. Students and staff should keep well clear of power lines.
 - ✓ Students and staff should take care on the river bank and/or any steep slopes. Hard hats should be worn if required. Safety-jackets will be worn during exercises close to the river by both staff and students.
 - ✓ Walking from one field to another. Any fences should not be climbed over, but gates used at all times. Obey all road traffic, pedestrian and passenger regulations.
 - ✓ Engaged in the hydrological exercise: Students and staff should take care on and near the stream banks. Extra care is to be taken when measurements are carried out in the stream. If stream is flooded no measurements are to be taken in the stream. Depending on the stream conditions life-jackets may be worn during exercise in the stream, and whistle may be used to summon help.