



UNIVERSITY OF  
**LINCOLN**

**Lincoln School of Computer Science**

**UNDERGRADUATE  
Final Year Project  
STUDY GUIDE**

**2014/15**

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## **1. Introduction**

A Final Year Project or Dissertation is a key component of almost all undergraduate degrees, regardless of discipline. In many ways the project is intended to be the culmination of your higher education. It is an opportunity to demonstrate your mastery of the various skills you have been developing over the course of your degree programme. More importantly, as the project is a self-directed programme of study that requires you to undertake significant research and development work, the project is an opportunity to demonstrate your ability to learn and solve problems independently. These are precisely the qualities valued most highly by employers and recruiters for prestigious postgraduate degree programmes.

In addition, successful completion of the project requires a range of practical skills to be developed and applied, such as organisation and planning, time management, research skills, and effective production of documentation.

In the Lincoln School of Computer Science, the Final Year Project is split over two modules: CMP3638M Project Preparation, and CMP3060M Project. These units combined contribute 45 CATS points towards final year study. The standard University CATS weighting suggests therefore that approximately 450 student hours should be dedicated to conducting study for these units combined. This is almost 40% of your final year marks. Further details of these modules are specified below.

## **1.1 CMP3638M Project Preparation - Module Synopsis**

This module provides students with the skills and information necessary to conduct a successful project. The module runs in Semester A and is delivered through a series of lectures that all take place over the first three weeks of term.

The expected output of the module is a project proposal, which is due early in Semester A. Upon completion of this module, students should have formed a clear understanding of the aims and objectives of their project, as well as a feasible means for fulfilling those aims and objectives. This unit contributes 15 CATS points towards final year study.

### **Learning Outcomes**

On completion of the unit of study you will be able to:

- [L01] articulate the aims and objectives of a project;
- [L02] critically appraise potential techniques and tools to aid in the development of a non-trivial artefact;
- [L03] identify appropriate timescales and deliverables for the development of a nontrivial artefact.

Crucially, you are expected to agree upon the above through a process of reading relevant literature and through discussions with your supervisor. Your supervisor will be invaluable in helping you produce a feasible project plan – take advantage of their help.

You are expected to submit an ethical approval form at the time of submitting your proposal. This form will be reviewed by the School of Computer Science research ethics committee and you will be given feedback on whether your methods are approved, or whether you need to make some alterations to ensure that your work adheres to the ethical guidelines. Please see the document called “guidance on ethical approval,” which can be found in the ethical approval upload area in the project preparation module on blackboard.

The assessment briefing document and criterion reference grid for CMP3638M are available on blackboard and provide additional information on what is expected.

## 1.2 CMP3630M Project - Module Synopsis

This unit provides students with an opportunity to demonstrate their ability to work independently on an in-depth project with an implementation element that builds on their established knowledge, understanding and skills. Implementation implies the generation of an output from one, or more, stages of the software development life cycle. Students will normally be expected to demonstrate their ability to apply practical and analytical skills, innovation and/or creativity, and to be able to synthesise information, ideas and practices to provide a problem solution. Self-management and self-evaluation are key expectations of this process.

This module runs across both semesters, but has no lectures attached. Rather, you are expected to have 15 minutes per week of consultation with your project supervisor. You are strongly encouraged to take advantage of this opportunity as frequently as possible. Importantly, the Project should address a topic related to your degree programme. This unit contributes 30 CATS points towards final year study.

The submission requirement for this assessment is made up of two components:

- A deliverable artefact. This can be in the form of code or software or SDLC related analysis, which addresses a specific identified need.
- A project report, which accounts the detail behind the deliverable artefact, there will more on the structure of the project later.

### Learning Outcomes

On completion of the unit of study you will be able to:

- [L01] apply practical and analytical skills in the design and implementation of a nontrivial set of project goals;
- [L02] critically evaluate and reflect on the process of undertaking an individual project;
- [L03] evidence research in the problem domain;
- [L04] prepare a detailed report which evaluates a project solution.

## 1.3 Teaching & Learning Methods

The unit takes the form of student managed self-directed learning supported by an academic tutor with expertise in the area under investigation. Tutorials between the student and their supervisor are held at intervals to be negotiated between them, either by face-to-face

contact or via technological means.

#### **1.4 Summary of submission requirements**

For the project module there are a number of submission requirements:

- You will create an artefact that responds to one or more of the recognised stages in the software development life cycle.
- This artefact must be demonstrated to your supervisor. The purpose of the demonstration is to verify that an artefact has been completed by you to an agreed standard
- You will prepare a formal project report that details the work you have conducted.
- You should submit two identical hard copies of your project and make an equivalent electronic submission to Black Board.

The assessment briefing document and criterion reference grid for CMP3638M are available on blackboard and provide additional information on what is expected.

## 2. Choosing a project

The first step in carrying out your project is a crucial one – choosing a topic for your project. The focus of the work should be relevant to the course for which you are registered. You must also ensure that you have a genuine interest and purpose in pursuing the work. You need to choose something that will continue to interest you when the going gets tough! The final report should address one main question, which will be reflected in the project title.

There are a number of steps in the process of deciding upon a project to undertake over the course of your final year. In order to help with this process, each supervisor has uploaded a list of suggested projects, which can be found in the study materials on blackboard. Please take time to read through these.

Your first step is to read the list of projects that have been suggested by staff members. These will be available to you on or before the beginning of week 0.

Step 2 is where you go and talk to the person listed as the contact person for the projects you are interested in. There is not a lot of detail in this list, so you should have a chat, find out what you would be expected to do, let the staff member know what kinds of skills you can bring to that project, and propose your own twist on it if appropriate. The project modules are worth quite a lot of your final degree marks, so you should be comfortable that you are able to undertake the project, but you should also be very interested in the topic. This is an entire years worth of work!

Step 3 is to submit your project choice form. You will be allowed to choose a first, second and third option.

Some of you may have already decided on a project topic and done some background research over the summer. If this is the case, you still need to find an appropriate supervisor for the work. So, look through the list, look at each staff members research interests, find someone who you think will be interested and able to help you, and, as above, go speak to that staff member and put them on your list.

If there are any problems / confusion / anything - contact me: Dr. Conor Linehan, [clinehan@lincoln.ac.uk](mailto:clinehan@lincoln.ac.uk), Room MC3220B.



### **2.1.1 Client-Centred Projects**

Sometimes charities or businesses contact us with interesting projects that are suitable in scope for undergraduate students to carry out. Alternatively, students often have personal contacts with businesses who can, likewise, provide suitable projects. This is an interesting opportunity to work with 'real world' people and problems and can look very good on a CV. However, be aware that dealing with these external companies adds an extra layer of complexity to your task, and the responsibility will be yours to ensure you have regular meetings with the client, and that the client and your supervisor both know what you are doing.

Please be aware that if you choose to undertake a client centered project we expect the same academic standards to be upheld in all aspects of the work as if you undertake a research project.

- All decisions made must be justified with reference to academic literature.
- The client is not a substitute for a full requirements gathering or evaluation exercise. These must be conducted following best-practice procedures and should be appropriately scoped. The client should of course be part of that process – but should not be the sole source of information – this is a sure way to get a bad grade.
- The involvement of a client provides an interesting context for the work, but the work should be of the same standard regardless of their inclusion or not.

## **2.2 How do I know if my project idea is appropriate?**

There are two ways to answer this question; the first based on the technicalities involved in the accreditation of your degree programme, the second based on academic excellence.

### **2.2.1 Technicalities**

It is crucial to note that all projects, regardless of the degree programme you are undertaking, must address at least one stage in the software development life cycle:

- Initiation/planning
- Requirements gathering and analysis
- Design
- Build or coding
- Testing

- Operations and maintenance
- Or, and any one or more of the SDLC topics for example:
- Management and control
- Work breakdown structure organization
- Critical review of SDLC methodologies
- Or anything which can be considered complementary to the subject of SDLC

We are aware that vast arrays of different types of projects are possible within these constraints. For example, development-based projects will typically address most or all of the stages, while more research-oriented projects will typically be focused on requirements gathering or evaluation. In writing your project proposal, you must make it 100% clear what function that project fulfils in the software development life cycle. This is a useful exercise that will help you focus your work.

In fact, it is incredibly important to make sure that the scope of your project is appropriate. If you are only undertaking one stage of the SDLC, you will be expected to carry out that work to an extremely high standard – i.e., to the standard of published academic work in the relevant field of study. If all stages are addressed, each of those stages doesn't need to be done in as much depth. However, the work should still be informed by best practice in the relevant field.

We ask that your projects involve a “non-trivial” amount of work. Non-trivial means 7 months worth of work. If we don't think it will take 7 months to undertake the work you are proposing, it is not a valid project. Simply making a website or game level is not acceptable – there must be a commitment to best practice, as evidenced by academic literature, at every stage of development. An interesting idea, or application of your experience is not sufficient justification.

Further, as I am sure you are aware, our undergraduate degree programmes are accredited by the British Computing Society (BCS). They have laid out expectations of what a Final Year Project in Computer Science should involve. These expectations are laid out in pages 11-12 of the following document:

<http://www.bcs.org/upload/pdf/hea-guidelinesfull-2010.pdf>

For expedience, I will copy the relevant section below:

It is expected that within an undergraduate programme, students will undertake a major computing project, normally in their final year and normally as an individual activity, giving them the opportunity to demonstrate:

- their ability to apply practical and analytical skills present in the programme as a whole
- innovation and/or creativity
- synthesis of information, ideas and practices to provide a quality solution together with an evaluation of that solution
- that their project meets a real need in a wider context
- the ability to self-manage a significant piece of work
- critical self-evaluation of the process

### 2.2.2 Academic Excellence

The best way to understand, and demonstrate, that your project idea is appropriate, is to read relevant research papers. Regardless of the topic that you are interested in, there will more than likely be decades worth of research papers on that topic available to you. In those research papers, the authors will have made well-informed arguments for why the research is interesting or useful, they will have described methodologies and explained why some are more appropriate than others, they will have described problems encountered and opportunities for future work. Therefore, reading a good range of relevant papers is an excellent way to initially come up with a research question, and an appropriate methodology for addressing that question.

In fact, a brief, initial literature review is the only way that you can plan a project without making massive mistakes in terms of topic or methodology. By not undertaking this step you risk undertaking projects that are uninteresting, irrelevant and ill conceived.

You are strongly encouraged to consult with examples of excellent previous projects - currently available in the library - to help you understand the scope of the challenge ahead.

### 3. Writing Your Proposal

A project proposal must be submitted early in Semester A (see submission deadlines on Blackboard for exact dates). The form expected of this proposal is outlined in the assessment briefing document and project CRG. The project proposal serves a number of important purposes:

1. It requires you to focus, at an early stage, on identifying a specific topic that you wish to work on over the course of the year. The earlier you decide on the specifics of your work the better.
2. It requires you to produce a plan of your work for the entire year.
3. It allows us to judge whether your work is significant and interesting enough to justify a years worth of work, and allows us to provide guidance on whether your plan is feasible.
4. It provides an opportunity for the ethics committee to review your plan before you undertake the body of your work.

#### 3.1 Requirements for the project proposal

You are required to submit a formal Project Proposal, which should; 1) detail the intended topic of investigation, 2) outline any technical requirements, and 3) provide an indication of how those requirements will be met. The content and length of the project proposal document is negotiable, but the headings below would normally be appropriate.

1. **Title**
2. **Aims and Objectives:** A list of aims, and an indication of the practical steps that will be taken to fulfil those aims. (100 words)
3. **Background:** This section should explain why the project is interesting or useful, with reference to relevant academic literature. (750 words)
4. **Methods:** Some indication must be given of what methodologies are appropriate to employ in undertaking this project. Include both development methodologies & research methodologies and justify your decisions with reference to relevant literature. (500 words)
5. **Risk Assessment and Contingency Plans** (500 words)
6. **Indications of milestones and time frames:** Preferably use a Gantt chart.
7. **Ethical approval form**

## **4. Undertaking Your Project**

Once your proposal has been submitted and approved, you will have the responsibility of conducting your project for the remainder of the year. Although the dissertation is your own work, students benefit hugely from regular contact with a supervisor, who will provide guidance and support.

### **4.1 Responsibilities of the Supervisor**

The supervisor will:

- provide guidance about the nature and planning of the work, and the standard expected;
- be accessible to students for regular tutorial sessions, as agreed with the student.
- request written work and accounts of progress as appropriate, and return any work with constructive comments within a reasonable period of time;
- ensure that the student is clearly informed of any inadequacies of progress and of any standards of work which fall below the level generally expected.
- maintain a supervision log
- remind students about the University regulations, particularly with respect to plagiarism;

### **4.2 Responsibilities of Student**

The student will:

- initiate contact with the tutor;
- keep minutes of supervision meetings
- discuss with the tutor the type of guidance and comment found to be most valuable and agree a schedule of meetings, using a face-to-face approach or access through technology;
- take the initiative in raising problems or difficulties, however elementary they may seem;
- maintain the progress of the work in accordance with the schedule agreed with the tutor, including the presentation of written work, in sufficient time for comments and discussion to inform subsequent work;
- maintain a supervision log

### **4.3 Background research**

While you are expected to do a brief literature review for the project proposal, a more comprehensive one should be completed before you get into design & development work. The literature review is where you

demonstrate that in undertaking your project, you have consulted other work that has been done in the subject area. Here, you are placing your own work in the context of that done by others. You compare and contrast what you are doing with the particular approach or methodology of what has been done elsewhere. Use existing sources and data as much as possible.

Use up to date sources that reflect current thinking. Articles from refereed journals are more reliable sources than those from non-refereed publications. Thus, in order to receive good grades for your work, the work itself must be based on thoughts and evidence published in journal articles, conference papers and academic books. Blog posts, Wikipedia, magazine articles, reports published by marketing firms and other non-transparent online sources cannot be accepted as the basis of your work.

You are likely to want access to journal articles and the University subscribes to two major online journal sources – The Association of Computing Machinery (ACM) Digital Library and the IEEE Computer Society magazines and transactions. Access to these and other online resources can be gained through the University Portal site. The School has already posted a useful ‘jump page’ on the Portal that links to lots of online resources. It might be the start point for your research. You can find this page by following: University Portal University Resources Library and Learning Resources Finding Information Resources for My Subject.

If you cannot find the relevant article in our database of subscriptions, Google Scholar can often help you out. In fact, this resource is now commonly used as a first port of call by most researchers as you can get access to published articles very quickly.

Your research question may require you to carry out some primary research involving questionnaires, interviews, observation, or other methods. Discuss with your supervisor the feasibility of your approach. Do you have the necessary time and skills to do what you are proposing and how valuable are the results likely to be? Primary research of this type typically requires ethical approval, so ensure you have read the ethical guidelines attached and get clearance for your work from your supervisor.

Carrying out original research can add a unique dimension to your work, but it must be set in the context of current thinking in the field and must be based on a very strong literature review. All methods have

advantages and limitations and these should be discussed in the methodology section of your work.

All the information you have gathered must be organised, evaluated, selected and presented in a way which 'tells a story' to the reader. It should be relevant to the research question (topic) of your independent study and inform a logical argument in narrative form which links the conclusion you reach with the aims and objectives of the dissertation, the investigation and the findings.

#### **4.4 Research, development & evaluation**

Once you have gained a clear understanding of the context of your project, and have discerned appropriate methods for development & evaluation, it is up to you to carry out the work. Everybody's project will be significantly different in this respect, so you must take guidance for your decisions from your supervisor, and from your reading of literature.

## **5. Writing Your Report**

The project report is considered to be the most significant aspect of the submission and it records the context, events and outcomes and provides an academic setting to the project. The report covers the processes involved in the execution of the project; it evaluates the outcomes and considers in a reflective manner the changes that might have been applied.

The work should have appropriate academic referencing and underpinning throughout. Whenever you make a statement which is considered factual you should endeavor to substantiate it through referencing. Make sure the work has appropriate references, appendices, and, if appropriate, glossary of terms sections also.

The structure of the project report will depend to some extent on the type, nature and context of the project but would usually contain a number of basic headings as outlined below. Remember to consult the project CRG when planning this work as it will indicate what types of activities are given the most weighting – indicating which sections you should focus on.

### **5.1 Abstract.**

An abstract presents a brief summary of the project in its entirety and is used to help the reader quickly ascertain the project's purpose, context and outcome. In fact, the purpose of the abstract is to enable readers to have a view of what the report is about without having to read the entire document. The abstract is usually written when the project report has been completed and goes at the beginning of the document. See academic papers for examples of what this should look like.

### **5.2 Background.**

The literature review is an essential requirement of any academic project. This provides the background to the project, it establishes what you intend to do, and shows the reader that what you have done is the result of academic study, rather than an unfounded whim. The literature review is where you contextualise your work with respect to existing published literature. If undertaking an external project, you should also describe the client and outline the nature of their work or business, and explain how the artefact will address the client's needs.



### **5.3 Methodology.**

This section will cover a number of sub sections where appropriate. Not all projects will require each section – discuss this with your supervisor. The key thing is that you demonstrate critical awareness of all of the processes that you have employed in your work.

#### **5.3.1 Project Management.**

Some awareness of project management should be demonstrated in all projects. This section should outline the nature of your project and the specific characteristics that need to be considered in determining what project management methodology you should use. You should identify the specific demands of your project in terms of project management, and support your rationale for the selection of a methodology with appropriate, recent academic references.

#### **5.3.2 Software Development.**

There should be a methodological analysis of software development approaches used. The determining factors for selection will, amongst other things, be the particular characteristics of the software to be developed, the nature and predisposition of the client (if applicable) and the computer environment requirements.

It is important to note that what is NOT required here is a pedestrian account of popular software/ IS development methodologies or a simplistic review of their strengths weaknesses. You are to work from the specific requirements that are indicative of your project and explain how these might determine approaches for software /IS methodologies. Where relevant, you should give serious thought to the proper design of research and requirements capture approaches -which may include surveys, questionnaires, interviews.

You should identify the specific demands of your project in terms of software development, and support your rationale for the selection of a methodology with appropriate, recent academic references. DO NOT produce a simple discussion of software development, or explain how typical methodologies work, (such as spiral, waterfall, etc) your assessors already know this.

#### **5.3.3 Toolsets and Machine Environments.**

Toolsets refer to both software development and to project management, so the coverage should address both. This section will outline the tools for software development and project management process; it will make appropriate comparisons between tools available

and argue for the most appropriate selection based on metrics, possibly a matrix diagram and other criteria.

The report will discuss possible machine environments under which the artefact might be required to operate and through analysis, comparison of features and possible user requirements a determination of the chosen environment (s) will be made. You should identify the specific demands of your project in terms of software development, and support your rationale for the selection of a methodology with appropriate, recent academic references.

DO NOT Justify the grounds for using specific toolsets and environments simply because you know them well or have developed skills already. This project is to give you the opportunity to challenge yourself.

#### **5.3.4 Research Methods.**

You should include a section that investigates the types of research methods necessary to validly answer the questions you are interested in. Cite relevant sources to justify your choices.

For example:

1. Do you need to have objective, observable data, or subjective, self-reported data?
2. Should the form of your data be nominal, ordinal, interval or ratio?
3. How do you intend on representing your results – this will have an impact on your study design.
4. If you are doing an experimental analysis
  - a. What are your independent and dependent variables?
  - b. Is a between-groups or within-groups approach most appropriate?
5. Do you need to statistically analyse your results?
6. Consult your supervisor when drawing this section up.

#### **5.4 Design, Development and Evaluation**

The next section of the document will vary significantly in both structure and content, depending on the type of project you are undertaking. However, it must be noted that if your project contains significant software development work, this should be presented in the structure expected of a formal development report. If your project involves an experimental evaluation – especially if that evaluation involved human participants, you are expected to write this work up in the format expected of a scientific research report. Some projects will

include both software development and experimental evaluation with human participants. In this case, you are expected to discuss both procedures with sufficient detail.

#### **5.4.1 Software development projects**

For projects that involve significant software development components, it is expected that you discuss:

1. Requirements elicitation, collection and analysis
2. Design
3. Building or coding
4. Testing
5. Operations and maintenance
6. Evaluation: Where there is an artefact as the deliverable in the project, there will be some evaluation carried out to determine how effective and efficient the “solution” is to addressing the problem identified. Appropriate metrics should be considered for this evaluation and an appropriate audience(s). Changes or amendments to the original delivered should be discussed here pointing out why these changes might have been effected if time or opportunity presented itself.

#### **5.4.2 Research projects**

For projects that include primary research components it is expected that you present this work in a manner appropriate to a scientific report.

1. Participant recruitment
2. Evidence that ethical procedures have been followed. Include informed consent documentation.
3. Study design (short summary of research methods section) – including hypotheses.
4. A detailed description of the procedure that each study participant experienced. Include every detail that would be needed in order to replicate your work.
5. Results of experiment – present in the format of a scientific report.
6. Analysis of results. Consider the results of your work with respect to both your own specific hypotheses and wider context identified in your literature review.

#### **5.5 Project Conclusion**

This should be understandable not only for the person who writes it, but for the person who just wants to have the general picture of the

work and its results. Secondly, it is very important to base your conclusions upon issues that have been raised in your introduction, and then investigated in your methodology and evaluation. In the introduction the author of the work presents the main ideas that are to be examined, developed and discussed in the project, therefore in the conclusion the necessary responses to the questions or problems or requirements listed in the introduction are to be revealed. So, the structure of the conclusion in a project is governed by the structure of introduction.

### 5.6 Reflective Analysis

Finally the report should conclude by considering a reflection on the process of completing the project. How things went? What might have been done differently given 20:20 hindsight? What went well and why? What went badly, why and how was it addressed? Consideration of the theory versus the practice in terms of methodological process requires discussion.

### 5.7 Details of structure expected

On **the cover** there should be:

- the title of the work;
- your full name;
- your enrolment number
- the title of your award (degree name)
- *The University of Lincoln*
- the date of submission.

On the first page inside the cover the title of the report and your name should appear again.

The second page should be the 'Acknowledgements' page - state here the name(s) of any person(s) who assisted you in the preparation of this work and briefly state how they helped you e.g. contacts in organisations. Acknowledgements should be brief and factual.

On the third page there should be an 'Abstract' of the dissertation. This should be a summary of the aims and scope of the work, when and how it was carried out, and the results and conclusions emerging from the work. It should be about 250 words long.

The fourth page should be the 'Contents' page, showing the titles of the different sections of the dissertation and corresponding page numbers.

This is the final task you will complete when the whole of the work is finished and checked.

On the fifth page put a 'List of tables and figures' and the numbers of the pages on which they occur. If the tables or figures are referred to more than once, they should be placed in the Appendices; if you refer to them just once, you may place the table or figures within the texts.

On the sixth page commence the main chapters

Following the main body of the text give the list of References.

Finally, add any Appendices and Annexes.

These can include material such as long tables, lengthy quotations, and other material used in the study which gives additional evidence but which is too cumbersome to include in the main body of the text. The material must be referred to in the main body of the text (for example, 'see Appendix 9 which illustrates.....'), and will not be acknowledged in the assessment of the work otherwise.

An annex is a document produced by another author and its pages are usually independently numbered.

### **5.8 Formatting instructions**

The most significant guidance on formatting comes from the Lincoln School of Computer Science official formatting guidelines, which you can find on blackboard. Below are some additional notes specific to the project report:

The entire work must be paginated.

Line spacing should be set to 1.5 lines.

Margins: allow 30mm on the left-hand side of the page and 25mm on the right-hand side, top, and bottom of the page.

Reports are expected to be printed double-sided and long-edge bound.

Your Project must be bound using appropriate binding methods, this can include: spiral binding, heat binding or professional book binding techniques.

### 5.9 Plagiarism

This is a serious offence. Plagiarism is detectable and rigorous checks are made. If proven, a fail grade may be awarded, which has serious implications for your Degree. Avoid this by attributing all ideas where necessary and sourcing all material. See the School of Computer Science guidelines on plagiarism for further details. These are available on blackboard.

## **6. Demonstrating Your Work**

You must demonstrate your artefact to your supervisor, second marker, and your colleagues at a session that takes place in one afternoon at the end of the second semester.

In this session you will be expected to demonstrate the artefact that you have developed as part of your project to your markers, and to anyone else interested who may pop in. Crucially, 10% of the marks for the project are based on demonstration of your work. These marks can only be awarded in this session. You must attend or you will fail this criterion.

The session will run from 12:00-17:00. You will have one hour to carry out any setting up before marking will commence at 13:00. If you need any equipment other than the lab PCs in order to demonstrate your artefact, it is your responsibility to ensure that you have that equipment available during this session. We will only be providing the Lab PCs, unless if you have made prior arrangements with your supervisor or the school technician.

## **7. Submitting Your Project Report**

You are required to submit bound 2 identical copies of your work. One will be retained for the library and one will be available for your collection after the assessment process has been completed. You are strongly advised to make an extra copy for yourself in addition to these. In addition to this you must also make an electronic submission through Blackboard.

The submission date and hand in arrangements will be confirmed to you via the Computing Student Notice Board and the Blackboard. The Faculty regulations and procedures regarding late submissions, extensions and mitigating circumstances all apply to Project. You should ensure that any applications are made in the appropriate manner.

Since you must hand in a hard copy, you must allow time for printing and binding. Do not expect that you will be able to get this done on the day of the hand-in. If you want to get the printing and binding done professionally, arranging an appointment with a local printer is recommended as queues can be very long this time of year for those who just drop in.

Both copies of your report must have a cover sheet attached - it is up to you to ensure this is the case when handing it in.

Line-spacing: Please use 1.5 spacing.

Word Count: There is a figure of 15,000 mentioned earlier in the document. This figure is neither a maximum or minimum word count. Rather, it is a guide to help you understand roughly the amount of work expected. You won't be marked down specifically for going over or under 15,000 words. However, if your report is significantly above or below that mark (i.e., by more than 5,000 words) it probably means you have done something wrong. Please go to the library and read through some recent project reports in order to ensure that you have included all relevant sections.

If you have included huge amounts of information in appendices - for example, code from an application you have built - it is fine to attach this as a DVD, rather than printing hundreds of pages.

As well as the two hard copies, you must submit an electronic copy of your report and all supporting materials via blackboard.

### **7.1 Some Common Problems**

Check the following points which might help you to avoid some commonly recurring problems.

One of the most common criticisms is that the work lacks critical and analytical thought. In your approach, always question 'why' rather than 'what'.

Overly descriptive dissertations do not usually attract good grades. Students using their own experiences often produce descriptive dissertations. Your findings must be critically interpreted and examined and should include academic underpinning. Some introductions are also overly descriptive and lengthy. Include only information which is relevant.

Students often put a good deal of effort into researching the topic they have chosen, but then struggle to put the information to good use. Make sure the information you collect is usable! This means identifying what you wish to collect and determining what you are going to do with it before you start collecting.



Frequently the work ends up as a number of discrete essays, with either a very fine link, or no link whatsoever. This is inevitably due to a lack of structure and/or focus. The importance of a draft structure cannot be stressed enough; otherwise you have little or no control over the final structure.

Avoid making sweeping statements which cannot be substantiated.

If you have encountered limitations of any sort, don't ignore them, acknowledge them

Loss of work is frustrating, to say the least. When word-processing the work, saving the work on a regular basis is essential (e.g. every 30 minutes). Save to a portable medium as well as the hard disc. For extra security, when you finish for the day, save to another location.

This can be difficult and there is no easy answer. Keeping the printed work in a binder may help your motivation, as the individual sections and chapters develop into the final piece of work.

## **7.2 Submission FAQ**

Q. Should I include the usual headers & footers on every page of the submission?

A. Yes, do this as normal. Its essential for hard copy submissions, in case the binding falls apart.

Q. Does the guideline word count include appendices?

A. No

Q. Should I include a hard copy of my appendices?

A. If you have a lot of appendices, you can include them on DVD. Provide one DVD for each copy of your submission. Include a list of your appendices as part of your general table of contents for the project. Name the files on your DVD in the same way that you have named the appendix in your table of contents (ie. Appendix 1 - raw data.pdf)

Q. Should I print it single or double sided?

A. Either is absolutely fine. You won't lose marks for printing it double sided, but you will save paper.

Q. If I get my report professionally printed and bound, how will I attach a cover sheet?

A. The school administrative staff will be equipped with ingenious devices such as rubber bands, paper clips and staplers. We'll make sure that the sheet is attached securely without damaging your binding.

Q. Should there be a cover sheet on the electronic copy?

A. Yes - use the normal cover sheet

Q. How do I reference games in my thesis?

A. Include a separate list after your list of references, and title it "Ludography." Follow Harvard style for referencing games - Developer (Year). Game Title. Platform. Publisher

Q. Can I use text from my project proposal in the final report.

A. That's fine

Q. Should I write the critical reflection using the first or third person?

A. Either is fine - whatever makes most sense to you.

## 9. Resources

The library staff, and particularly our academic subject librarian Carole Bee, are always available to help you with research-related questions. They can organise resources for you and will hold sessions, on your request, that can help you with research or study skills.

There are examples of excellent projects from previous years available on the shelves of the library. Simply go to the library and ask the staff to point you in the correct direction. This will be one of the more useful resources for you to consult throughout the year.

If your project requires the use of statistics, the library have a maths and stats help centre, where staff will sit with you and provide guidance on how to conduct valid statistical analysis on your data.

### 9.1 Recommended reading

#### **Research methods**

Creswell, John W. 2009 Research design: qualitative, quantitative, and mixed methods approaches / Los Angeles London : SAGE

Dawson, Christian W. Projects in Computing and Information Systems: A Student's Guide (Addison Wesley 2009).

Hampson, Liz (1994), *How's your dissertation going?*, Lancaster : Unit for Innovation in Higher Education, Lancaster University 0901800511

O'Leary, Zina. (2004) The essential guide to doing research. London, Sage 0-7619-4199-1

Sharp, John. (2002) The management of a student research project. 3<sup>rd</sup> Edition.

Saunders, et al Research methods for business students /: Financial Times Prentice Hall , Harlow 2009 Edition:5th ed.

Walliman, Nicholas SR. (2004) *Your undergraduate dissertation: the essential guide to success*. London, Sage 0-7619-4140-1

#### **Study skills**

Hind, David W.G. (1994) *Transferable Personal Skills*. 2<sup>nd</sup> Edition.  
Sunderland, Business Education 0-907679-69-2

Lewis, Roger (1994) *How to Manage Your Study Time*. Collins  
Educational  
0-00-322364-7

Palmer, Richard (1996) *Brain Train: Studying for Success*. 2<sup>nd</sup> Edition.  
London, E. & F.N. Spoon 0-419-19830-X

### **Writing**

Irving, Ray & Smith, Cathy (1998) *No Sweat! (The Indispensable Guide to Reports and Dissertations)*. The Institute of Management Foundation 0-85946-295-1

*The Style Guide*. 5<sup>th</sup> Edition. (1998) London, Economist 1-861971-11-7

Weyers, K Harlow, J (2007) *How to write dissertations and project reports* by McMillan, Pearson Prentice Hall,

## APPENDIX 1 - PROJECT SUPERVISION LOG

*The log can be completed for each meeting/contact with the student. Supervisors and students should sign to show agreement on the outcomes.*

STUDENT NAME	
COURSE	
EMAIL	
TEL	
ADDRESS	

DISSERTATION TITLE	
--------------------	--

SUPERVISOR	
------------	--

Supervision Date	Start time:	End Time:
Action Points		
Student Signature:		Supervisor Signature:

Supervision Date	Start time:	End Time:
Action Points		
Student Signature:		Supervisor Signature:

## **APPENDIX 2 - REFERENCING YOUR WORK USING HARVARD**

A bibliographical reference should contain sufficient information for someone else or yourself to trace the item in a library or bookshop. It is very important to be consistent and accurate when citing references. The same set of rules should be followed every time you cite a reference. The Department of Marketing, Advertising and PR requires you to use the Harvard system to compile the reference list for your all academic work.

### **Why Harvard?**

A standard system makes it easier to trace the sources efficiently. There are a number of systems for referencing but we use Harvard. This system was developed in the USA and it has become the most common system in use internationally. It is sometimes called the author/date system as well. The Harvard system has advantages of flexibility, simplicity, clarity and ease of use for both author and reader. References are listed alphabetically in the bibliography and cited in the text so there is no third place to look such as footnotes, which are features of other systems.

Language explained:

Citing means formally recognising, within your text, the resources from which you have obtained information.

Citation is the passage or words quoted within your text, supported with evidence of the source.

Reference is the detailed description of the item from which you have obtained your information.

### **Harvard method of citation in the text**

Citations in the text should give the author's name with the year of publication and then all references should be listed in full alphabetical order at the end of the paper/dissertation. All statements, opinions, conclusions etc. taken from another writer's work should be acknowledged, whether the work is directly quoted, paraphrased or summarised. In the Harvard System cited publications are referred to in one of the forms shown below:

### Single author

*In a study (Keller, 2003) brand equity was investigated....*

When an author has published more than one cited document in the same year these are distinguished by adding lower case letters after the year within the brackets.

*Keller (2003a) wrote about building, measuring and managing...*

### Two authors

*In the book by Jobber and Fahy (2003)...*

### More than two authors

*Dibb et al (2001) conclude that....*

If more than one citation is referred to within a sentence, list them all in the following form, by date and then alphabetically:

*There are indications that e-marketing accounts for more than 10% of the United States' total economic output..... (Smith and Marks, 2003; Samuel, 2002; Fyfe, 2001)*

### Harvard method of quoting in the text

When quoting directly in the text use quotation marks as well as acknowledging the author's name, year of publication and page number of the quote in brackets. Short quotations e.g. up to 2 lines can be included in the body of the text:

*Aaker (1991) argues four categories "brand as product, brand as organization, brand as person, and brand as symbol" (p.10).*

Longer quotations should be indented in a separate paragraph:

*According to Burson (1974), one of the founders of the international group of public relations consultancies, Burson-Marsteller*

*"The public relations executive helps formulate policies that will enable a corporation to adapt to social trends and communicates – both internally and externally – the reasons of those policies" (p.224).*

If part of the quotation is omitted then this can be indicated using three dots:

*Diamond (1995) stated that "networking is no longer solely within the male domain . . ." (p.88).*

#### Website citations

Website with author: cite the author and date as usual

Website without author: Where a page has no author, use the title as the point of reference.

*There are 4 main codes which offer guidelines on advertising practice (Advertising Association, 2004).*



## Harvard method of listing references and bibliographies at the end of the text

References should be listed in alphabetical order by author's name and then by date (earliest first), and then if more than one item has been published during a specific year by letter (2001a, 2001b etc). Whenever possible details should be taken from the title page of a publication and not from the front cover, which may be different. Each reference should include the elements and punctuation given in the examples below.

Authors' forenames can be included if given on the title page but they are not required to be. The title of the publication should either be in *italics*, highlighted or underlined, whichever you choose be consistent.

The format of references vary depending on the type of publication. See below:

### An article in a journal:

Include the following information in this order:

- 1 Author(s) of the article
- 2 Year of publication (in brackets)
- 3 Title of the articles.
- 4 Title of the journal, *italics*, highlighted or underlined,
- 5 Volume and part number (in brackets) or month,
- 6 Page numbers of the article.

Aaker, David A. (1996) Measuring brand equity across products and markets. *California Management Review*, 38 (3), 102-119.

### Electronic Journal articles from the internet:

Include the following information, in this order:

- 1 Author(s)/Editor(s)
- 2 Year of publication (in brackets).
- 3 Title of article.
- 4 Journal title in *italics*, highlighted or underlined.
- 5 Volume (issue),
- 6 Page/s.
- 7 Available from: URL.
- 8 Accessed: [date].

Chaudhuri, A. (2002) How brand reputation affect the advertising brand equity link. *Journal of Advertising Research* vol. 42 (3), p. 33 – 43. Available from: <http://www.warc.com/>. Accessed: [24<sup>th</sup> August 2004].

If you require further assistance or guidance with referencing please contact your academic subject librarian – Adele Beeken by email ([abeeken@lincoln.ac.uk](mailto:abeeken@lincoln.ac.uk))

### Conference papers

Paper from published conference proceedings with author or editor(s):

Hastings, G. (2002) Marketing for the angels. *Invited plenary presentation at the 31st EMAC Conference - Marketing in a Changing World: Scope, Opportunities and Challenges*, Braga, Portugal, 28-31 May. p. 59 – 70.

If no author or editor is given on the title page the name of the conference is cited first either in italics or underlined.

### Academic Book

Include the following information. The order is:

- 1 Author(s), editor(s) or the organisation responsible for writing the book.
- 2 Year of publication (in brackets)
- 3 Title and subtitle (if any), *italics*, highlighted or underlined. The examples given are in *italics*.
- 4 Series (if any).
- 5 Edition if not the first.
- 6 Place of publication if know,
- 7 Publisher.

### A book by a single author:

Jobber, D. (2003) *Principles and practice of marketing*. London, McGraw Hill.

### A book by two authors:

Jobber, David and Fahy, John. (2003) *Foundations of marketing*. 2nd edition. London, McGraw Hill.

### A book by more than two authors:

Dibb, Sally *et al.* (2001) *Marketing: concepts and strategies*. Boston, Houghton Mifflin.

### An edited book:

(ed.) and (eds.) are suitable abbreviations for editor and editors.

Keller, Kevin Lane. (ed.) (1995) *Branding and brand equity*. Cambridge, Marketing Science Institute.

**A chapter in a book:**

Chance, P. (1995) Brand extensions evaluations. *In*: K. Keller. (ed) *Branding and brand equity*. Cambridge, Marketing Science Institute. p. 51- 72.

**A thesis or dissertation:**

McFeat, K. (2004) *Do consumers buy brands or an image?*. Unpublished BA (hons) dissertation, University of Lincoln.

**Internet:**

There are a number of ways of citing work from the internet. We have chosen a style that fits in with the Harvard style in order to maintain consistency.

Include the following information, in this order:

- 1 Author/editor.
- 2 Year (in brackets)
- 3 Title *italics*, highlighted or underlined.
- 4 [online].
- 5 Location of server (if known).
- 6 Publisher/maintainer of site.
- 7 Available from: URL.
- 8 [date accessed].

BBC. (2004) *BBC News: Business* [online]. BBC online. Available from: <http://news.bbc.co.uk/1/hi/business/default.stm> [Accessed Sunday 14th August 2004]

**Reference material:**

Generally this type of material does not have a named author or editor and it is acceptable to refer to the publication by its title.

*Kompass 2004: United Kingdom*. (2003) 41<sup>st</sup> edition. East Grinstead, Reed Business Information.

**Film or commercial video**

You should include the following information, in this order:

- 1 Title – *italics*, highlighted or underlined.
- 2 Year (in brackets)

- 3     Subsidiary originator. (Optional but director is preferred – note the  
      directors name is not written surname first)
- 4     Place of production,
- 5     Organisation.
- 6     [Medium:format].

*Trainspotting*. (1996) Danny Boyle. Edinburgh, Polygram. [film:DVD]

**An article in a newspaper:**

Thomson, C. (2004) Focus: An injection of competition. *The Times*,  
Saturday May 18 2004, p.8.

If no author name is given then anon should be used instead.

Anon (2004) Small business head into orbit. *Guardian*, Monday June 16  
2004, p.27.

**Government publications:**

In broad terms White Papers contain statements of Government policy  
while Green Papers put forward proposals for consideration and public  
discussion. They are cited in the same way.

**A White paper:**

Department of Health (1996) *Choice and opportunity: primary care: the  
future*. Cm.3390. London, Stationery Office.

## Appendix 3 - ETHICAL PRINCIPLES FOR CONDUCTING RESEARCH WITH HUMANS

### UNIVERSITY OF LINCOLN UNIVERSITY ETHICS COMMITTEE

The following ethical principles govern research with humans conducted under the authority of the University:

- The principle of respect for persons acknowledges the dignity and autonomy of individuals, and requires that people with diminished autonomy be provided with special protection. This principle requires that subjects give informed consent to participation in research. On account of their potential vulnerability, certain subject populations are provided with additional protections. These include children, prisoners, the mentally disabled, and people with severe illnesses.
- The principle of beneficence requires us to protect individuals by seeking to maximise anticipated benefits and minimise possible harms. It is therefore necessary to examine carefully the design of the study and its risks and benefits including, in some cases, identifying alternative ways of obtaining the benefits sought from the research. Research risks must always be justified by the expected benefits of research.
- The principle of justice requires that we treat subjects fairly. For example, subjects should be carefully and equitably chosen to insure that certain individuals or classes of individuals – such as prisoners, elderly people, or financially impoverished people – are not systematically selected or excluded, unless there are academically or ethically valid reasons for doing so. Unless there is careful justification for an exception, research should also not involve persons from groups that are unlikely to benefit from subsequent applications of the research.

Each of these principles carries strong moral force, and difficult ethical dilemmas arise when they conflict. A careful and thoughtful application of the principles will not always achieve clear resolution of ethical problems. However, it is important to understand and apply the principles, because doing so helps to assure that people who agree to be research subjects will be treated in a respectful and ethical manner. Nothing that is said in these principles and guidelines will absolve the responsibility of the researcher to act in accordance with the best interests of the participants.

These principles are to apply to research with human participants. They are intended to provide both the general principles and rules to cover situations

encountered by researchers. They have as a primary aim, the welfare and protection of the individuals and groups with whom researchers work. It is the individual responsibility of each researcher to aspire to the highest possible standards of conduct in carrying out research. Researchers should respect and protect human and civil rights. Some areas of experience and behaviour will be outside the reach of research for ethical reasons. These guidelines have been adapted from the ethical guidelines of a variety of professional and other bodies involved in conducting research with human subjects.

## 1. GENERAL FRAMEWORK

- 1.1. The membership of the University Ethics Committee consists of a Chair nominated by Academic Board – currently the Pro Vice Chancellor (Research) – representatives nominated by each Faculty/Institute, the University Chaplain (or nominee) and relevant co-opted members.
- 1.2. It has responsibility for agreeing protocols for research on people, on behalf of Academic Board – as well as issuing guidance and advice to colleagues undertaking research on people.
- 1.3. As a central part of its role, the University Ethics Committee has formal responsibility for the approval of all research on humans conducted under the authority of the University.
- 1.4. This responsibility is normally sub-delegated to the Faculty/Institute Research Committees, which may in turn devolve responsibility for approval as appropriate while retaining overall oversight of the process.
- 1.5. The Faculty/Institute Research Committees should include an external member in the discussion of ethical issues.
- 1.6. In all cases of research with human subjects, whether conducted by staff or students of the University, approval must be obtained prior to the commencement of the research from the Faculty/Institute Research Committees.
- 1.7. In cases of uncertainty at Faculty/Institute level, the projects must be referred to the University Ethics Committee for adjudication. The University Ethics Committee will also consider appeals against decisions related to ethical issues of the Faculty/Institute Research Committees.
- 1.8. In the case of research involving individual students, the research must have the prior approval of the research supervisor whose responsibility it is to ensure that the planned research accords with the above ethical principles for conducting research.
- 1.9. Where research also requires approval from an outside body, for example, the NHS Local Research Ethics Committee, the research proposal shall be submitted for approval to such bodies. This will normally take place once it has been approved through University procedures.
- 1.10. The Faculty/Institute Research Committees will supply an annual report to the University Ethics Committee in December of each year that will include a summary of their actions in relation to research ethics and any issues for consideration by the University Ethics Committee. The latter will monitor their activities. The University Ethics Committee will in turn submit its annual report to the Academic Standards Committee in February of each year.
- 1.11. Members of the University Ethics Committee and Faculty/Institute Research Committees will display appropriate levels of confidentiality in discussing ethical issues.
- 1.12. In all cases researchers must consider the ethical implications of their research and the personal consequences for the participants in that research.
- 1.13. The investigation should be considered from the point of view of all participants in the research – such that any foreseeable threats to their well-being, health, values or dignity are ethically justifiable in terms of the benefits.
- 1.14. In conducting research, researchers should interfere with the participants or context from which data are collected only in a manner that is warranted by an appropriate research design and that is consistent with researchers' roles as academic investigators.

1.15. Researchers should recognise in terms of the participants that in a multi-cultural and multi-ethnic society with diverse religious belief and value systems, where investigations involve individuals of different ages, gender and social background, researchers may not have sufficient knowledge of the implications of any investigation for the participants. It should be borne in mind that the best judge of whether an investigation will cause offence may be a member (or members) of the population from which the participants are to be drawn.

## 2. CONSENT TO RESEARCH

2.1. Prior to conducting research (except research involving only anonymous surveys, naturalistic observations, or similar research), researchers should, whenever possible, enter into an agreement with participants that clarifies the nature of the research and the responsibilities of each party.

2.2. Researchers should use language that is understandable to research participants in obtaining their appropriate informed consent (except as provided in section 4 on Dispensing with Informed Consent). Such informed consent shall be appropriately documented prior to any research being conducted, in accordance with the standards of any professional body.

2.3. Using language that is reasonably understandable to participants, researchers should inform participants of the nature of the research; they should inform participants that they are free to participate or to decline to participate or to withdraw from the research; they should explain the foreseeable consequences of declining or withdrawing; they should inform participants of significant factors that may be expected to influence their willingness to participate (such as risks, discomfort, adverse effects, or limitations on confidentiality, except as provided in section 7 on Deception in Research); and they should explain other aspects about which the prospective participants inquire.

2.4. When researchers conduct research with individuals such as students or subordinates, researchers should take special care to protect the prospective participants from adverse consequences of declining or withdrawing from participation.

2.5. Where research is being conducted with children or other individuals who are unable to give consent, or who are unable to understand the nature of the research process for other reasons, special care should be taken to safe-guard their interests.

2.6. Where children, or other individuals, who are unable to understand the nature of the research process, may be the subjects of research lack of participation in the research procedures should be taken as a withdrawal of consent at that point.

2.7. For people who are legally incapable of giving informed consent, researchers nevertheless (a) should provide an appropriate explanation, (b) should obtain the participant's assent, and (c) should obtain appropriate consent from a legally authorised person, if such substitute consent is permitted by law.

2.8. If harm, unusual discomfort, or other adverse consequences for the individual's future life might occur, the researcher must obtain the disinterested approval of the relevant Faculty/Institute Research Committee, inform the participants, and obtain real, informed consent from each of them.

## 3. CONFIDENTIALITY

3.1. Subject to the requirements of legislation, including the Data Protection Act, information obtained about a participant during an investigation is confidential, unless agreed in advance. In principle, research participants have a right to remain anonymous. This right should be respected both where it has been promised explicitly and where no clear understanding to the contrary has been reached. These strictures apply to the collection of data by means of cameras, tape recorders, and other data-gathering devices, as well as data collected in face-to-face interviews or in participant-observation. Research participants should understand the capacities of such devices; they should be free to reject them if they wish; and if they accept them, the results obtained should be consonant with their right to welfare, dignity, and privacy. In the event that anonymity and/or confidentiality cannot be assured to participants, the participant must be warned of this prior to giving consent.

## 4. DISPENSING WITH INFORMED CONSENT

4.1. In exceptional circumstances before determining that planned research does not require the informed consent of research participants, researchers should consider

- any applicable external regulations and institutional requirements, and they should obtain the explicit approval of the relevant Faculty/Institute Research Committee.
5. INFORMED CONSENT IN RESEARCH FILMING OR RECORDING
    - 5.1. Researchers will obtain informed consent from research participants prior to filming or recording them in any form, unless the research involves simply naturalistic observations in public places and it is not anticipated that the recording will be used in a manner that could cause personal identification or harm.
  6. OFFERING INDUCEMENTS FOR RESEARCH PARTICIPANTS
    - 6.1. In offering professional services as an inducement to obtain research participants, researchers should make clear the nature of the services, as well as the risks, obligations, and limitations.
    - 6.2. Researchers shall not offer inappropriate financial or other inducements to obtain research participants, particularly when it might tend to coerce participation or to risk harm beyond that which they risk without payment in their normal lifestyle.
  7. DECEPTION IN RESEARCH
    - 7.1. It is accepted that there may be occasions where deception in research is necessary and justified. However, researchers should not conduct a study involving deception unless they have determined that the use of deceptive techniques is strongly justified by the study's prospective scientific, medical, or educational value and that equally effective alternative procedures that do not use deception are not feasible. This should have the explicit approval of the relevant Faculty/Institute Research Committee.
    - 7.2. The withholding of information or the misleading of participants is unacceptable except where strong justification is given and where prior approval has been received from the relevant Faculty/Institute Research Committee.
    - 7.3. Researchers should never deceive research participants about significant aspects that would affect their willingness to participate, such as physical risks, discomfort, or unpleasant emotional experiences.
    - 7.4. Any other deception that is an integral feature of the design and conduct of an experiment must be explained to participants as early as is feasible, preferably at the conclusion of their participation, but no later than at the conclusion of the research.
  8. PROVIDING PARTICIPANTS WITH INFORMATION ABOUT THE STUDY
    - 8.1. Researchers should provide a prompt opportunity for participants to obtain appropriate information about the nature, results, and conclusions of the research, and researchers should attempt to correct any misconceptions that participants may have.
    - 8.2. If scientific or humane values justify delaying or withholding this information, researchers must take reasonable measures to reduce the risk of harm.
    - 8.3. Researchers should inform research participants of their anticipated sharing or further use of personally identifiable research data and of the possibility of unanticipated future uses.
  9. WITHDRAWAL FROM THE INVESTIGATION
    - 9.1. At the outset of the research (except in the case of justified covert research, or anonymous research) investigators should make it plain to participants that they have the right to withdraw.
    - 9.2. In the light of the experience of the research, or as a result of debriefing, the participant has the right to withdraw retrospectively any consent given, and to require that their own data, including recordings, be destroyed.
    - 9.3. Researchers must take measures to honour all commitments they have made to research participants.
  10. PROTECTION OF PARTICIPANTS
    - 10.1. Researchers have a primary responsibility to protect participants from physical or mental harm during the investigation. Normally the risk of harm must be no greater than in ordinary life i.e. participants should not be exposed to risks greater than or additional to those encountered in their normal lifestyles. Where the risk is assessed as being greater than in ordinary life the provisions of paragraph 2.3 should apply. Participants must be asked about any factors in the procedure that may create a risk, such as pre-existing medical conditions, and must be advised of any special action that they should take to avoid risk.



10.2. During the research, a researcher may obtain information about, or evidence of physical, medical or psychological problems of which the participant is unaware. In such a case, the researcher has a duty to inform the participant if the investigator believes that by not so doing, the participant's future well being may well be endangered.

10.3. If during the research a participant solicits advice or help from the researcher, caution should be exercised. If the issue is serious and the researcher is not qualified to offer help, then the appropriate source of professional advice should be recommended.

10.4. Participants should be informed of procedures for contacting the researcher within a reasonable time period following participation, should stress, potential harm, or related questions or concerns arise despite the precautions required by these principles and guidelines. Where research procedures might result in undesirable consequences for participants, the researcher has the responsibility to detect and remove or correct these consequences.

10.5. Where research may involve behaviour or experiences that participants may regard as personal and private, the participants must be protected from stress by all appropriate measures, including the assurance that answers to personal questions need not be given. There should be neither concealment nor deception when seeking information that encroaches on this privacy.

10.6. In conducting research with children, great caution should be exercised.

10.7. When discussing the results with parents, carers, teachers or others in loco parentis since evaluative statements may carry unintended weight.

#### 11. OBSERVATIONAL RESEARCH

11.1. Studies based upon observation must respect the privacy and well-being of the participants. Unless those concerned give their informed consent to being observed, observational research is normally only acceptable in those contexts where those observed would expect to be observed by strangers. Additionally, particular account should be taken of any belief systems or local cultural values and of the possibility of intruding upon the privacy of individuals who, even when in a normally public place, may believe that they are unobserved.

