



Trinity College Dublin

Coláiste na Tríonóide, Baile Átha Cliath

The University of Dublin

School of Computer Science and
Statistics

Management Science and Information Systems Studies

Senior Sophister Project Guidelines 2020-2021



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PART I - Information

1. Overview

Senior Sophister projects consist of real problems for real clients. As such, they require real solutions which are usable by the client and the degree to which students achieve this is an important factor in determining their project grades.

The project work is divided into three phases:

- (1) A **definition phase**, culminating in an interim report to be presented in the last week of Semester 1;
- (2) An **execution phase**, from start up through to week 10 of Semester 2;
- (3) A **report phase**, culminating in the delivery of a final report at the end of Semester 2.

The project is a substantial part of the year's work accounting for 20 of the 60 ECTS. Students are expected to work on the project about 1 day per week during semester and considerably more during vacation, amounting to a total of about 40 working days, including familiarisation and report writing. An outline schedule for the project work is shown on the next page.

Students are expected to consult with their supervisors regularly, ideally weekly, and to submit regular written progress reports in addition to their interim and final reports. Supervisors will report to the project examiners in this regard.

There are two layouts for project reports, students can also combine the layouts if their project encompasses data analysis and software development:

- A layout and format suitable for **Data Analysis** type projects, where the nature of the project is analytical, organisational or procedural;
- A layout and format suitable for **Systems Development** type projects, where the end product is a piece of developed software and/or a computer package implementation.

Each project is examined by the Supervisor and an Internal Examiner. Marks are reviewed by the External Examiner and the Director of Studies.

Some past MSISS projects are available online at <https://www.scss.tcd.ie/publications/projects/>

The examiners will take into account the level of difficulty of the project, the supervisor's input, the student's aptitudes and application, relationships with the client and report accuracy and/or software quality. Each supervisor will report on special difficulties.

Students may be examined orally by the Director of Studies, the External Examiner & an Internal Examiner, in the presence of the Supervisor. Students will be notified of the dates of these oral examinations in Semester 2.

2. Project Schedule

The following is an outline of the schedule for this year. It may vary in individual cases. The ideal model is set out below.

Semester 1

Week 1-3

- Project outlines circulated to class.
- Students fill in ranking forms.
- Provisional allocation of supervisors.

Week 3-4

Projects allocated to students and supervisors. Supervisors and students have detailed discussions. Supervisors introduce students to clients.

Weeks 4-8

Students start work under supervision. Supervisors seek regular written reports and meetings.

Week 9

Supervisors and students have a detailed review of progress, in consultation with client. Terms of reference are agreed with the client, work for vacation is outlined, and supervisor gives guidance on preparation of Interim Report.

Week 11

On Monday of Week 11, Interim Reports must be submitted Blackboard **on Monday 7th December 2020**. These are in the form of one typed page. See Section 5.

On Week 11 there will be Interim Report Presentations. Details will be circulated.

Vacation

Extensive work on projects including, where appropriate, extended time spent with client.

Semester 2

Weeks 1-10

Work proceeds, with regular reports to, and meetings with, supervisor.

Week 11-12

Supervisor reviews student's work and advises on possible modifications and on drafting of report.

Friday 23rd April 2021 project submitted.

3. Project Deadline and Related Regulations

The deadline for submission of project reports is 12 noon on Friday 23rd April 2021

The following regulations apply specifically to final year projects and are reproduced from the course regulations.

Students should read these regulations carefully and be sure that they understand them fully.

- (1) Projects must be submitted by the deadline given.
- (2) Where a student has difficulties meeting the deadline due to illness, personal circumstances or a particular problem with the project, the student or the student's tutor (or supervisor) may make an application to the Director of Studies for an extension of the deadline. The grounds for extensions are set out in detail below.
- (3) Applications for extensions cannot be made retrospectively. The decision to grant such an extension is at the sole discretion of the Director of Studies.
- (4) Projects should be submitted electronically.

Where a project is submitted late, the following rules will apply:

- Five marks will be lost immediately for the first day the project is overdue. For each subsequent day of the first week overdue, one mark will be deducted for each working day (Monday through Friday) or part of a working day that the project is late.
- For the second and third weeks overdue, 2 marks per working day or part thereof will be deducted.
- A project which is more than three weeks overdue will not be accepted and no marks will be awarded for it.

Note that these rules override the normal rules for submission of assessments. Where an extension to the project deadline is granted, a project not submitted by the revised deadline will not be accepted.

3.1 Grounds for Extension

THIS SECTION IS IMPORTANT – PLEASE READ IT CAREFULLY

You have approximately six months to complete your project. A key part of the project assessment is organisation and planning of the work to be done. Delivering the final report on time is part of this. For this reason it is strongly recommended that you complete the final draft two weeks before the deadline. Planning includes allowing a margin of error for last minute problems such as file corruption or PC failure. I think this should go in a section all of its own. If you do not allow for such things, you may find that last minute hitches lose you valuable marks.

Keep at least 2 independent backups of ALL your work.

3.1.1 Grounds Which Will Not be Accepted

The following will not be accepted as reasons for granting an extension in the final two weeks before the project deadline:

- PC problems or other hardware/software failure;
- File corruption;
- Virus or equivalent problems;
- Lost files/documents;
- Client problems.

3.1.2 Definition of Deliverables

Your final year project will be submitted to BlackBoard.

Reports should be submitted in PDF format. The PDF should include the appendices. You can also submit (if relevant) any s/w code or additional files (user/technical manuals) in a zip file. The report and the zipped file should be named with your username, e.g. jsmyth.pdf and jsmyth.zip.

For Confidential projects, all elements of your submission should be encrypted. Details on how to encrypt files will be circulated.

Partial delivery will not count. Examinable projects cannot be changed after the submission deadline. In exceptional circumstances, the client copy may be changed with the permission of your supervisor and the Director of Studies.

3.1.3 Requesting an Extension

The only acceptable reason for extension in the final two weeks of the project will be standard non project related matters such as serious personal illness or family bereavement.

A student with project difficulties (e.g. an inaccessible client or major data problems) may apply for an extension up to two weeks before the deadline. It must be signed by the student and the supervisor/or tutor. If the request is granted, the Director of Studies (or in his/her absence, the Director of Undergraduate Teaching and Learning) will sign the extension form and a copy will be given to the supervisor/tutor. Please note that project related requests for an extension must come through your supervisor/tutor. Other requests should come through your tutor. Extensions are only given in exceptional circumstances and are not automatically granted.

4. Research Ethics

Any research project that involves human participation conducted through this course (for example, a questionnaire or survey, or system user-evaluation, etc.) must have an independent review by the School Research Ethics Committee before its commencement.

Individual applications are considered on their own merits. A basic principle is that prospective participants should be fully informed about the research and its implications for them as participants, with time to reflect on the possibility for participation prior to being asked to sign an informed consent form. Informing prospective participants fully includes declaring potential conflicts of interest that the researcher may have in conducting the research, detailing how participants may withdraw data associated with their participation from further analysis within the study, explaining the preservation of their anonymity within the study, warning them about potential consequences of discovery during the study of issues that would necessarily have precedence over assurances of anonymity, and so on.

Application forms, with guidelines, can be found here:

<https://scss.tcd.ie/undergraduate/ethics/>

All applications must be reviewed and signed by the research Supervisor or Principal Investigator on the project. This signature confirms an assertion that the application is complete in terms of its formal requirements; it does not stand as proxy for ethical approval. Forms which are not signed or not presented at an acceptable standard (eg: incomplete or containing excessive typographical or grammatical errors) will be returned and may therefore incur delays for the researchers involved.

It takes time to prepare an application for research ethics approval, to have the application considered, and to respond to feedback on the application where issues are raised. You should plan in your work for the time it takes to obtain research ethics approval. Furthermore, retrospective approval will not be granted.

The Research Ethics Committee processes a large volume of applications and **will normally provide a response within 4 - 6 weeks.**

Please also note, research conducted in the School of Computer Science and Statistics should be undertaken with cognisance of the TCD Guidelines for Good Research Practice.

<http://www.tcd.ie/about/policies/assets/pdf/TCDGoodResearchPractice.pdf>

5. Interim Report Guidelines

Interim reports should be concise and informative and adhere to the following guidelines:

- (1) They must be typed/printed. All reports must be in 11 point Arial with one and half spacing.
- (2) They should preferably not exceed one A4 page and must not exceed two A4 pages.
- (3) They should contain:
 - The terms of reference;
 - An outline of work to date;
 - Any interim conclusions.
 - An outline of further work planned, with a target schedule;
- (4) The writing should be clear and comprehensive. If necessary, several drafts should be prepared to ensure this.
- (5) The terms of reference should be as explicit and concrete as possible, without exceeding, say, 100 words. The scope should be clearly defined.
- (6) The work outlines should refer to data/information (to be) collected, techniques (to be) used, problems encountered or anticipated and, in the case of further work, a detailed schedule.
- (7) Interim conclusions should state any important results obtained to date and, where appropriate, the nature of anticipated conclusions to the project.

- (8) The structure of the report should be as follows:

Management Science and Information Systems Studies

Project: (Title)
Client: (name)
Student: (name)
Supervisor: (name)

Review of Background and Work to Date

Terms of Reference

Further Work

Conclusions

- (9) The original project outline should be circulated with the interim report, serving as background material.
- (10) Interim report presentations will be scheduled for week 11 in Semester 1. These presentations are not graded.
- (11) Interim Reports must be submitted on Blackboard by **12 noon on Monday 7th December 2020**.

6. Guidelines for Project Reports

There is a prescribed format for project reports.

Software Based Projects

For projects where the core of the work is the development of software or implementation of a software package, an alternative set of guidelines is provided in Appendix 1.

General Report Guidelines

The report should be divided into chapters, sections within chapters and if necessary subsections (to split up long sections).

The first chapter should be an **Introduction**. It should state the objectives of the project, give the background to it and generally orientate the reader. It should then summarise the report chapter by chapter using the following bullet point format:

- Chapter 2 sets out
- Chapter 3 contains.....

and so on.

The second chapter should be devoted to **Conclusions and Recommendations**. These should be briefly stated and refer, at the end of each such statement, to the section(s) of the report where details may be found. No material should be introduced in this chapter which is not dealt with elsewhere in the report.

In the case of **Data Analysis** type projects it may be appropriate to include a **literature review** of up to 5 additional pages in Chapter 3.

The remaining chapters should present the body of the report, written in a style suitable for the client. Usually, this means that mathematical, computing and other technical details should not appear, nor should complicated tables or graphs. These should be put into technical appendices if necessary, with adequate references to them as appropriate.

Simple tables, diagrams and formulae needed for immediate illustration of a point in the text may be included. Each chapter should begin with a brief (unnumbered) description of its contents to orientate the reader.

Layout

The following are the rules for layout:

1. The entire text of the chapters should occupy no more than 25 A4 pages. The length of appendices should not exceed 15 A4 pages. The Director of Studies may, in special circumstances, allow this limit to be exceeded.
2. The fonts to be used are:

Chapter headings	Arial, 12 point, bold, capitals.
Section headings	Arial, 12 point, bold, title case (i.e. all major words with capital first letters).
Subsection headings	Arial, 11 point, underlined, title case.
Body text	Arial, 11 point.
Bullet points	• (In Word: Alt and * on Macs, click the bullet icon on PCs).

3. Other layout points are:

Text should be spaced at 15 points. This can be done in Word by:

- Selecting the text required for spacing;
- Opening Format/Paragraphs
- Setting the “Line” or “Line Spacing” box to “At Least” and 15 pt.

Margins must be 2.54 cm all round.

4. Running Header

There should be a running header at the top of each page of the main text. This should be in Arial, 10 point with a solid line underneath followed by a blank line (as in the example) and should show:

Client Name - Project Title	Page No.
Month Year	

(Blank line here)

Client and/or project title may be abbreviated if there are space problems. The solid line can be produced using the shift and the character to the right of the ‘0’ on the keyboard.

5. Text should be right and left justified.

Chapter Lay-Out

Chapters should be numbered 1, 2, etc. Chapter titles, beginning with the number, should be displayed in capitals, on the left hand top of a new page, with spaces above and below. The title should be flush with the left hand margin. Chapter numbers should be one half inch to the left of the margin. This can be done in Word by moving the margin markers on the left hand side of the ruler line.

Sections should be numbered consecutively within chapters, e.g. 2.1, 2.2, etc. The section number should be a half inch left of the margin. Section titles should be displayed flush left with the margin.

Subsections should not be numbered.

Figures and tables within chapters should be displayed horizontally, where possible. Each should have a numbered caption, below figures and above tables, in the style:

FIGURE 5.2.1 - Graph of the Average Waiting time Plotted Against the Parameter r.

TABLE 5.2.1 - Estimates of World Energy Consumption.

These refer to figure (or table) 1 in section 2 of chapter 5 and would be referred to in the text as

Figure 5.2.1 (or Table 5.2.1).

Equations and other mathematical displays should be typed flush left. Numbers, where required for reference elsewhere in the report, should be consecutive within sections, in brackets, flush right opposite the display. Display number (4.3.2) is the second numbered display of section 3 of chapter 4.

References to material anywhere in the report should include a page number.

General Structure

The report should start with:

- A title page,
- Declaration;
- Abstract,
- Preface and
- Table of contents

in that order.

The title page should have the heading laid out as follows:

1. The top left hand side of the page should have:

TRINITY COLLEGE DUBLIN
Management Science and Information Systems Studies
Project Report

in Arial, 14 point, bold with capitalisation as shown.

2. The centre of the page should have:

CLIENT NAME
Project Title

Date

All should be in Arial, 20 point, bold. The Client name should be in capitals and the Project title in title case. The date should be in italics.

3. The bottom of the page should show the student and supervisor names. The student name (in the format ***Prepared by: Name***) should be flush left and the supervisor's name (in the format ***Supervisor: Name***) flush right. Both should be in Arial, 14 point, bold, italic.

4. Titles should be reasonably short and sensible. Avoid titles like “An Investigation into the Feasibility of Using Certain Statistical Techniques in the Evaluation of Financial and Operating Leases in the Merchant Banking Sector.” Five to ten words should be enough.

Declaration

The following declaration should be placed on the first page of the report.

I declare that the work described in this dissertation has been carried out in full compliance with the ethical research requirements of the School of Computer Science and Statistics.

I have read and I understand the plagiarism provisions in the General Regulations of the University Calendar for the current year, found at: <http://www.tcd.ie/calendar>

I have also completed the Online Tutorial on avoiding plagiarism ‘Ready, Steady, Write’, located at <http://tcd-ie.libguides.com/plagiarism/ready-steady-write>

I declare that the report being submitted represents my own work and has not been taken from the work of others save where appropriately referenced in the body of the assignment.

Signed: _____

<Your name in full>

<Date>

Abstract

The third page should contain the abstract which should not be more than 100 words, giving in succinct technical form the aim and results of the project. The word “ABSTRACT” should be in capitals and centered at the top of the page in Arial, 12 point, bold capitals. There should be two spaces between the title and the text.

Preface

The fourth page should contain the Preface. This should identify the client, indicate the degree of success obtained and any special difficulties encountered and give acknowledgements of help given by firms, organisations and individuals. The preface should not exceed one typed A4 page. The word “PREFACE” should be in capitals and centered at the top of the page in Arial 12 point, bold capitals. There should be two spaces between the title and the text.

Table of Contents

The fifth page should be the Table of Contents. At the top of this page, flush left should be:

CLIENT NAME

Project Title

Date

All should be in Arial, 13 point, bold. The Client name should be in capitals and the Project title in title case. The date should be in italics. This should be followed by at least three spaces.

Underneath this should be the table of contents laid out as follows:

TABLE OF CONTENTS

NO.	SECTION	PAGE
1.	INTRODUCTION AND SUMMARY	1
1.1	The Client Company	Page no.
1.2	The Project Background	Page no.
1.3	Terms of Reference	Page no.
1.4	Summary	Page no.
2.	CONCLUSIONS AND RECOMMENDATIONS	Page no.
etc.		

APPENDICES

NO.	CONTENT	PAGE
A.	Original Project Outline	Page no.
B.	Interim Project Report	Page no.
.....		
K.	Tabulation of the Survey Results	Page no.
REFERENCES		Page no.

The heading 'TABLE OF CONTENTS' and 'APPENDICES' should be in Arial, 12 point, bold and capitals. Other text should be in Arial, 11 point and laid out as shown.

Page Numbering

Page numbering and the running header should begin with Chapter 1.

Appendices

Following the chapters, there will be appendices labelled A, B etc. with headings as in chapter headings. Running headers should *not* be used in the appendices. Appendices should be numbered at the bottom of the page as “Page A.1”, “Page A.2” etc. References in the text will be in the style Appendix B, p. B.14. Appendices may have sections, numbered and titled as chapter sections, e.g. Section A.1.

The first appendix should be the original Project Outline.

The second appendix should be the Interim Report.

References

Following the appendices, as the last item in the report, there will be a list of references, headed REFERENCES, centered. **You should use the ‘Harvard’ system described in Appendix 2.**

Software

Where software development has been a significant part of the project, a demonstration may be requested by the examiners.

Covers

Near the time of submission, a cover sheet will be circulated. The covers sheet contains the

- Title of the project
- Name of the client
- Your own name
- Date of submission

If the project is confidential, include the word “Confidential” after the FYP title on this cover page.

7. How Projects Will Be Assessed

Projects are examined by the supervisor and an internal examiner. Where the supervisor and the internal examiner disagree on the mark, projects will be assessed by the Director of Studies and by the External Examiner. The Director of Studies may, however, refer any project to the External Examiner.

There are slightly different marking approaches depending on whether a project is primarily a software development or an analysis type project.

Analysis Projects

For **Analysis Projects**, examiners will assess projects using the following framework:

Definition: How well the project is defined.

- Description of background;
- Identification of key factors in the problem/requirement;
- Clarity of the terms of reference.

Overview: How well the background has been researched.

- Detailed background;
- Review of the quality of the data;
- Review of client assumptions and opinions;
- General approach to the problem and its solution;
- Literature review (where relevant).

Analysis: How well the problem/requirement is understood?

- Initiative shown;
- Creativity demonstrated;
- How good is the evaluation of alternatives?
- How sound is the student's judgment of issues?

Solution: How good is the solution proposed?

- How good is the justification/support for the approach used?
- How well are the implementation issues identified?

Report: How well it follows the guidelines, notably:

- How well it adheres to the guidelines;
- The clarity and readability of the English;
- How good is the structure?
- Is cross referencing correct and well used?
- General neatness and appearance of the report;
- Are conclusions well cross-referenced to the text?
- Are the recommendations well cross-referenced to the text?

- Are non-text aspects (e.g. graphs) well chosen and effectively used? Are they well integrated and well designed?
- Is proper use made of appendices?

Validity: Is this a good/the correct approach to the problem? Specifically:

- Are the methods used appropriate?
- Are they properly used?
- Is the work accurate?

In all of the above, the following will be taken into account:

- The level of difficulty of the problem;
- Problems with the project not of the student's making;
- Problems with the client;
- Difficulties in the techniques required;
- The client's input and perception of the work done. ***This will be very important;***
- The student's relationship with the client;
- The student's aptitude, including an assessment of how much time and effort the supervisor had to put into the project and the report;
- Timeliness.

Software Projects

For ***Software Projects***, examiners will assess projects using the following framework:

Definition: How well the project is defined.

- Description of background;
- Identification outline requirements;
- Clarity of the terms of reference.

Overview: How well the background has been researched.

- Detailed background;
- Review of the quality of the data if appropriate;
- Review of client assumptions and opinions;
- General approach to the problem and its solution.

Analysis: How well the problem/requirement is understood?

- Initiative shown;
- Creativity demonstrated;
- How good is the evaluation of alternative software/development options?
- How sound is the student's judgment of issues?

Software How good is the system delivered?

- How well does it meet the requirements?
- Is it reliable/bug free?
- Quality of design;

- Quality of documentation;
- Is the system easy to use?
- Is it flexible?
- Has it been thoroughly tested?
- For packaged software, is the package appropriate?
- For package implementation, is the implementation effective?
- Has the system been properly implemented?

Report: How well it follows the guidelines, notably:

- How well it adheres to the guidelines;
- The clarity and readability of the English;
- How good is the structure?
- Is cross referencing correct and well used?
- General neatness and appearance of the report;
- Are conclusions well cross-referenced to the text?
- Are the recommendations well cross-referenced to the text?
- Are non text aspects (e.g. graphs) well chosen and effectively used? Are they well integrated and well designed?
- Are manuals complete and easy to read?

Quality Is this a good/the correct approach to the problem? Specifically:

- Are the methods/software tools used appropriate?
- Are they properly used?
- Is the end product of high quality?

In all of the above, the following will be taken into account:

- The level of difficulty of the problem;
- Problems with the project not of the student's making;
- Problems with the client;
- Difficulties in the techniques required;
- The client's input and perception of the work done. ***This will be very important;***
- The student's relationship with the client;
- The student's aptitude, including an assessment of how much time and effort the supervisor had to put into the project and the report;
- Timeliness

Appendix 1

General Structure of System Reports

The primary difference between a system and non-system report is that a system report will have less material in the chapters, but has a number of mandatory appendices and, where appropriate, the developed software and any user/technical manuals should be submitted in a zip file. This is not necessary for package implementations or where the software is sensitive and the client does not want a copy taken off site.

The report should be divided into Chapters, Sections within chapters and, if necessary subsections (to split up long sections).

- (1) The first chapter should be an **Introduction and Summary**. It should state the objectives of the project, give the background to it and generally orientate the reader. It should then summarise the report chapter by chapter using bullet point format as (for example) follows:
 - Chapter 3 contains the data model, including the Entity-Relationship diagram and attribute and relationship details. It also.... etc.
- (2) The second chapter should be a **System Overview**. This should describe the purpose and objectives of the system in business terms. It should include a brief summary of the technical environment. This chapter should include an overview diagram.
- (3) The third chapter should contain a **Description of the Work** done. It should describe any methodology used. All software/tools used should be listed and the required operating environment for the software set out.
- (4) The fourth chapter should contain **Recommendations** for any further development of the system.

The following appendices are mandatory:

- A. Project Outline.
- B. Interim Report.
- C. Design documentation. This should include, as appropriate:
 - Data model;
 - Data flow diagrams;
 - Process specifications;

- Standards and conventions used;
- For packages, parameter settings (such as the chart of accounts or customer coding system).

Students should consult with their supervisors as to the exact content of this appendix.

- D Sample reports and input screens.
- E For custom software, a sample of the application source and/or object code.
- F Test documentation, including:
 - The test plan;
 - Details of the testing procedure.

Students must make arrangements so that a demonstration of any software or package can be given if requested by any of the examiners. This should preferably be in the School, but may be on the client site if no alternative is possible.

General Layout

The rules here are exactly the same as for non-system projects.

Appendix 2

Harvard Referencing Guidelines

Introduction

When quoting directly from a source, the page number is usually included as in:

The rise in wages during this period was “considerable” (Smith, 1995:17)

This format is known as the Harvard system. Note that, if you do not have the original, but are using a second hand reference, you should make this clear, e.g.:

“The losses were due to poor co-ordination in marketing” (Jones quoted in Smith, 1993: 34).

Multiple Authors

Where there are one or two or even three authors, it is usual to give all names in the text. For four or more, it is more usual to give the name of the first author and add ‘*et al*’ (short for ‘and others’), e.g.:

During this period, many new organisational forms were tried (Smith, Jones and Murphy, 1997).

The growth in the region was much affected by the political instability at the time (Smith et al, 1980).

Multiple References

Where you are quoting several references in support of a point, separate references should be separated by semi-colons, e.g.:

Research on small business suggest that survival depends on many factors, but particularly on the management of liquidity (Haslett 1968; Mullins 1972; Mosurski et al, 2003).

Templates

In the reference section of your MSISS report, each reference in the text must be given in such a way that the reader can locate it. Here are some templates for you to use:

Reference to a book

Lock, D. (2003) *Project Management*, Gower, London.

Reference to a chapter in a book edited by somebody else:

Jones, B., Higgins, M. and O'Mara, P. (1989) "The rise of German Industry in the Early 20th Century" in, Smith, A. (Ed.), *Essays on Industrial Development in Europe*, Wiley, New York.

Reference to a paper in a journal

Smith, A. and Jones, B. (2001) "The Celtic Tiger: A decade of economic growth in Ireland", *International Journal of Applied Economics*, Vol. 10, No. 4, pp 26-38.

Two points are worth noting here:

Note the order here: Author surname, initial, year of publication, article title, journal name, volume, number and pages.

Reference to a paper in conference proceedings.

Smith A. (1992) "Industrial Relations in the Irish Airline Industry" in, Jones, G. (Ed.), *Proceedings of the 6th European Conference on Industrial Relations*, Hounslow Publishers, Essex, pp 145-155.

Again, note the order: Author surname, author initial, year of publication, paper title, editor surname, editor initial, title of conference proceedings, publisher (optional), publisher location (optional), pages.

Reference to a web site (practice here varies a bit)

Smith, A. (2004) "The Decline in the Irish Union Movement" available at:

www.industrialrelations.org/papers/xy3ff452_Smith

Reference to a newspaper

Smith, A. (2004) "The Problems Facing Unions", *The Irish Times*, 14th September 2004.

Reference to lecture notes etc.

McHugh, G. (2004) *Lecture Notes for Introduction to Management Course*, Trinity College, Dublin, (unpublished).

Reference to unpublished work or about to be published work (again, relatively rare):

Smith, A. (1986) "A History of the Trade Union Movement in Ireland", *Ph.D. dissertation*, University College, Dublin, unpublished.

Smith, A. (in press) "Union Recognition in Multinational Industries in Ireland: A Review of Recent Trends", to be published in Irish *Industrial Relations Review*, 2005.

The above should cover most contingencies.

It is legitimate to reference an unpublished work, but this should be done with care and in such a way that the information for the reader to access it if s/he really wants to is clear.

Finally, and rarely, you can cite a verbal statement (such as remarks made by a speaker at a conference). If you do this, you must make it clear that this is not a published document and that it is based on your recollection or notes. There are two ways of doing this as shown in the following examples:

Speaking at the annual conference of chemical engineers in February 2004, Professor Tom Jones commented on the growth of the chemicals sector in Ireland over the preceding 20 years.

Speaking at the annual conference of chemical engineers in February 2004, Professor Tom Jones referred to the growth of the chemicals sector in Ireland over the preceding 20 years as “quite remarkable”.

In the latter version it is implied that the words ‘quite remarkable’ were actually used by Tom Jones.

The following sites are useful:

<http://libweb.anglia.ac.uk/referencing/harvard.htm> (Accessed: 10th September 2020)

<http://sites.cardiff.ac.uk/ilrb/resourcehub-2/managing/citing-and-referencing/harvard/> (Accessed: 10th September 2020)