



**GUIDELINES  
FOR  
ACADEMIC AND FIELD SUPERVISORS  
OF  
MASTERS AND DOCTORAL STUDENTS**

**VERSION: 01/2010**

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## Section 1

### Introduction

Both the MSc and PhD degrees rely on at least half of the credits for the successful completion of a **research project** that is to **be reported on in a dissertation or thesis**. For our purpose research can be defined as the process of uncovering and communicating the truth about a phenomenon and/or its relationships to other phenomena. At Da Vinci:

- Master's degree research entails proving that the student can firstly conduct research and secondly, that such research can be utilized in the workplace.
- Doctoral research entails, firstly, proof of research competence (cf. Master's level), and secondly, that such research should contribute to the stock of utilisable knowledge (including utilisability in the work place). Research at this level is, among others, characterised by the originality criterion.

On the postgraduate research journey the student can often be likened to a visitor driving a car in an, for him/her, unknown region and the supervisor to a passenger from that region with knowledge/experience of the area, the general conditions of the road, local traffic rules and related matters. There rests a responsibility on the supervisor to guide the student to reach the destination successfully – without disempowering the student as the driver! This document summarises formal and other guidelines that should assist the supervisor in adding value to the journey not only for the student, but also for the supervisor.

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## Section 2

### Structure of the MSc Degree

The MSc programme consists of both coursework (120 credits) and a dissertation (120 credits). A student has to pass the coursework component before submitting a dissertation for examination. The focus is on management development. The full qualification accounts for 240 credits at NQF level 8.

#### Coursework

To assist supervisors, especially those who are relatively new partners, the coursework components are specified in some detail to serve as reference information that should be useful as coordinates for the supervision of the dissertations. The coursework component is delivered in the form of modules with pre- and post- module assignments (PMAs). This course work component consists of a Da Vinci component (60 credits) and a generic or custom-designed component (60 credits).

#### *The Da Vinci Component*

The Da Vinci component is compulsory and can be summarised as follows:

**Table 1: Composition of the Course Work Component of the M Sc Programme**

This framework establishes the Da Vinci component for the MSc (MOTI) qualification which is aligned to the registered qualification.

<b>SYSTEMS AND FOUNDATIONAL COMPETENCIES (30 credits)</b>		
(SOS) Self, Other and Social Contexts (10 credits)		
(PCD) Problem Solving, Creative Thinking and Decision Making (6 credits)		
(PWP) Professional Writing and Presentation (2 credits) The PWP assignment is compulsory to pass the PCD component		
(MSW) Managing the Systems Way (12 credits)		
<b>DA VINCI CORE COMPETENCIES (30 credits)</b>		
(MLC) Management and Leadership Competencies Draft		
(MOI) Management of Innovation (10 credits)	(MOT) Management of Technology (10 credits)	(MOP) Management of People (8 credits + 2 credits)
(MLC) Management and Leadership Competencies Final (2 credits) The MLC assignment is compulsory to pass the MOP component		
<b>Total Credits = 60 credits (50% of academic deliverables)</b>		

For each qualification the modules within this framework are applied at an appropriate level, specific to that qualification. The following table counterpoints the focus inherent within each module.

**Examples of modules: Generic Business Management Competencies – Masters (MOTI)**

<b>GENERIC BUSINESS MANAGEMENT:</b>	<b>CREDITS</b>
Building Interpersonal Connections	
<ul style="list-style-type: none"> <li>• The Management of Dissent</li> </ul>	12
<ul style="list-style-type: none"> <li>• Role clarity</li> </ul>	6
<ul style="list-style-type: none"> <li>• Procedures</li> </ul>	6

Persuading and Influencing	
<ul style="list-style-type: none"> <li>• Outside In Discussions</li> <li>• Focus Group Discussions</li> <li>• Compile and present a final presentation to Management</li> </ul>	12
Strategy Formation	12
Principles and Values	12
<b>Total Credits (50% of academic deliverables)</b>	<b>60</b>

<b>DISSERTATION</b>	<b>CREDITS</b>
(ELA) Exit Level Integration Assignment. The ELA is compulsory to pass the Dissertation	10
Dissertation	110
<b>Total Credits Awarded for the Dissertation</b>	<b>120</b>

<b>COMPONENT</b>	<b>CREDITS</b>
The Da Vinci Component	60
Generic Business Management Component	60
Dissertation	120
<b>Total Credits Awarded for the Masters Qualification</b>	<b>240</b>

<b>RESEARCH METHODOLOGY (48 credits)</b>	
Completion of of Workshop 1	12
Completion of of Workshop 2	12
Completion of of Workshop 3	12
Completion of of Workshop 4	12
<b>Total credits</b>	<b>48 credits</b>

The coursework component is concluded with an Exit Level Assignment based on the coursework (10 credits) and is compulsory to pass the dissertation component.

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## **The Dissertation**

A dissertation will be submitted in partial fulfilment of the award of an MSc (Management of Technology and Innovation) degree. In general, a dissertation represents a report on research involving the application of theory, covered at least partially in modules, to a significant work-related problem and demonstrating clear evidence of structured thought processes. (Total of 1 100 hours = 110 credits)

Essential elements of the dissertation include a critical review of relevant literature, research methodology and design, analysis of data/information, interpretation of the results and reporting of the preceding phases according to international conventions. These are fully covered in a separate set of guidelines on the dissertation.

The total workload of the dissertation should be in the order of 1 100 notional hours; which includes all work activities related to completing the dissertation.

More information on the nature of the dissertation can be found in the *Dissertation Guidelines* that is available on The Da Vinci website, but also available from the Research Office.

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## **Section 3**

### **Structure of the PhD**

The PhD programme consists of both course work (120 credits) and a thesis (240 credits). A student has to pass the coursework component before submitting a thesis for examination. The focus is on management development. The full PhD programme accounts for 360 credits at NQF Level 8+.

#### **Coursework**

To assist supervisors, especially those who are relatively new partners, the coursework component is specified in some detail to serve as reference information that should be useful as coordinates for the supervision of the thesis. The coursework component is delivered in the form of modules with pre- and post module assignments (PMAs). This course work component consists of a Da Vinci component (120 credits). The coursework component is concluded with an exit level assignment (10 credits). The students need to successfully complete the ELA in order to continue with the thesis (240 credits).

#### ***The Da Vinci Component***

This Da Vinci component is compulsory and can be summarised as follows:

**Table 2: Composition of the Course Work Component of the PhD Programme**

**The Da Vinci Component – PhD (MOTI) (Management of Technology and Innovation)**

This framework establishes the Da Vinci component of the PhD (MOTI) qualification which is aligned to the registered qualification.

<b>SYSTEMS AND FOUNDATIONAL COMPETENCIES (48 credits)</b>		
(SOS) Self, Other and Social Contexts (16 credits)		
(PCD) Problem Solving, Creative Thinking and Decision Making (6 credits)		
(PWP) Professional Writing and Presentation (2 credits) The PWP assignment is compulsory to pass the PCD component		
(PCD) Problem Solving, Creative Thinking and Decision Making (8 credits)		
(MSW) Managing the Systems Way (24 credits)		
<b>DA VINCI CORE COMPETENCIES (72 credits)</b>		
(MLC) Management and Leadership Competencies Draft		
(MOI) Management of Innovation (24 credits)	(MOT) Management of Technology (24 credits)	(MOP) Management of People (22 credits + 2 credits)
(MLC) Management and Leadership Competencies Final (2 credits) The MLC assignment is compulsory to pass the MOP component		
<b>Total Credits = 120 credits</b>		

(ELA) Exit Level Integration Assignment (10 credits) The ELA is compulsory to pass the Thesis
Thesis (230 credits)
<b>Total Credits Awarded for the Thesis = 240</b>

<b>COMPONENT</b>	<b>CREDITS</b>
The Da Vinci Component	120
Thesis	240
<b>Total Credits Awarded for the PhD Qualification</b>	<b>360</b>

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<b>RESEARCH METHODOLOGY (48 credits)</b>	
Completion Workshop 1	12 credits
Completion of Workshop 2	12 credits
Completion of Workshop 3	12 credits
Completion of Workshop 4	12 credits
<b>Total credits</b>	<b>48 credits</b>

The coursework component is concluded with an Exit Level Assignment based on the coursework (10 credits).

### **The Thesis**

A thesis shall be submitted in partial fulfilment of the award of a PhD (Management of Technology and Innovation) degree. In general, a thesis represents a report on research involving the application of theory, covered at least partially in modules, to a significant work-related problem and demonstrating clear evidence of structured thought processes. (Total of 2300 hours = 230 credits)

Essential elements of the thesis include a critical review of relevant literature, research methodology and design, analysis of data/information, interpretation of the results and reporting of the preceding phases according to international conventions. These are fully covered in a separate set of guidelines on the thesis.

The total workload of the thesis should be in the order of 2 300 notional hours; which includes all work activities related to completing the thesis.

More information on the nature of the thesis can be found in the *Thesis Guidelines* that is available on The Da Vinci website and from the Research Office.

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## **Section 4**

### **Supervisor(s) and Student**

#### **Appointment**

Each student has the support of two supervisors; viz.:

- A Field Supervisor, identified and nominated by the student, but approved by the Research Office based on the following criteria:
  - While it is not essential, Field Supervisors should preferably have a relevant degree at masters' level (for master's students) or a PhD (for PhD students)

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- The ability to identify and promote the implementability of the research and its findings to the work environment and in this way in effect facilitating the dissertation/thesis quality and relevancy process.
  - A prominent position of authority and responsibility in the work environment.
  - Have attended a one-day workshop on effective supervision
  - Should have shown significant awareness of the technical and managerial aspects of the project within the context of the work environment, and be in a position to assess the contribution of the student to the project.
- An Academic Supervisor, appointed by the Research Office, based on the following criteria:
    - Hold at least an appropriate master’s or doctoral degree to supervise students.
    - Have particular expertise in the field of the dissertation/thesis.
    - Preferably have already supervised at least two master’s or PhD students successfully.
    - Undertake to apply the relevant Da Vinci methodological, supervision, dissertation, thesis and ethical guidelines.
    - Have attended a one-day workshop on effective supervision

## **Functions and roles**

### ***Field Supervisors***

The field supervisor is responsible to

- Jointly, with the academic supervisor, monitor and support the student.
- Guide the student in terms of technical, managerial, and other general aspects, without doing the work.
- Liaise with the academic supervisor to ensure the project is adequately directed with respect to its industrial relevance.
- Monitor progress in order to assess effort, competence and comprehension.
- Facilitate or promote the implementation of the findings of the dissertation/thesis.
- Read and assess the completed dissertation/thesis, in terms of the Da Vinci guidelines.
- Conduct, with the academic supervisor, an oral examination in accordance with the guidelines.
- Allocate marks, at the conclusion of the oral examination, in accordance with the Da Vinci guidelines.

The above functions will require the following time commitments:

- Initial meeting between the student, field, and academic supervisors to ensure the research is viable, meets the academic and industrial requirements, and the necessary resources are available – 1 hour.
- Subsequent three-way meetings, if necessary – usually only the first is required.

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- The student should meet with the field supervisor to discuss his/her ideas, progress, problems – depending on the student –approximately one hour per month.
  - Assessment and feedback to the student during research programme – 10 hours.
  - Assessment of dissertation/thesis on submission – eight hours.
  - Oral examination – two- three hours.

### ***Academic supervisor***

The academic supervisor is appointed by the Research Office and serves as the ‘accountable’ entity with regard to the scientific process and quality of the research and would normally add value to the dissertation/thesis through the functions listed below:

- Serve as key communication node with regard to all matters relating to the progress of the student and project between Da Vinci, viz. the Registrar’s office and the Research Office, on the one hand and the student on the other.
- Guide the student in terms of the required technical, project management and academic requirements of the project, without doing the work.
- Liaise with the field supervisor to ensure the project is adequately directed in respect of its academic and industrial quality and relevance.
- Monitor progress, assess effort, competence and comprehension, as well as provide the student with feedback on submitted sections of the draft dissertation/thesis.
- Read and assess the completed dissertation/thesis in terms of the Da Vinci guidelines.
- Assess professional relevance of the research.
- Conduct, with the field supervisor, an oral examination in accordance with the guidelines.
- Allocate marks, at the conclusion of the oral examination, in accordance with Da Vinci guidelines.
- Normally, a supervisor will spend approximately 40 hours (including face-to-face, e-mail, etc.) per student in the course of the life-cycle of a dissertation/thesis project.

In summary, the supervisor’s contribution is normally such that publications (journal articles, conference papers, etc.) that may result from the dissertation/thesis would acknowledge the supervisor as second author.

### ***Student***

Although it is rather obvious, it may be necessary to emphasise that the student is the key role player in the research and innovation journey and it follows that the main responsibility for his/her progress and reaching the destination (of an MSc degree) lies with him/her. The following properties normally characterise the functions, role and responsibilities of a postgraduate student:

- Primary responsibility for initiating and completing all phases of the dissertation/thesis project.
- Commitment to learning, discovery/innovation and productivity.

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- Dedication and commitment to the research project, including the theme, design and project management plan.
  - Honouring of all agreements with the supervisors.
  - Regular feedback to all stakeholders (supervisors and employer).
  - Managing personal and social life knowing that sacrifices will be made over the short term!

### ***Launch of dissertation and thesis process***

The dissertation and thesis process is initiated when the student submits a research proposal, which the Research Committee approves. The Research Office will, upon the approval of a research proposal, communicate accordingly with both supervisors and student, and will thereafter manage the process. The process will be launched by a first meeting between the student and both supervisors following the guidelines below:

- The student and the research office should take the initiative to organise this first meeting .
- The research office is expected to brief the field supervisor and student on their respective roles and responsibilities.
- The research office will ensure that the field supervisor has all the necessary guidelines, marking schedules, etc.
- The research office will ensure that the envisaged research and project plan is acceptable to all parties in terms of its content and relevance that it is viable and that resources are available to ensure the student can carry out the research programme. All parties should commit themselves explicitly to the project plan (and eventual amendments to it).
- The meeting should spend time on clarifying all relevant aspects of the research design, including literature survey, research methodology, dissertation/thesis structure and any other aspects, and sign off on agreeing such outcomes stipulated in the design process.
- All three parties should agree to a time schedule and how the schedule will be monitored.

### ***Student progress***

The following cryptic notes may be relevant to both supervisor and student, since student progress is a key performance area at institutional and personal level, and obviously needs to be monitored – with the necessary guidance where necessary:

- All students will have completed an induction process that covers the research process and the requirements of the dissertation or thesis.
- Guidelines for the dissertation or thesis will be made available to all students as part of their information package.
- Students should have designed a project plan (including a time schedule) for their research programme.
- Students who are new to the research process often need guidance in tackling some aspects of the research such as knowing where to start, how to carry out a literature search, etc.

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### ***Relationship between Supervisor(s) and Student***

110 Credits of the MSc degree and 230 credits of the PhD degree, comprises of a research project undertaken by the student under the guidance of an academic and a field supervisor and reported in a dissertation/thesis. This means that the student and the supervisor(s) will have to work in close collaboration for the duration of the project. Experience has shown that the most productive relationships are built on the following assumptions:

- It is an evolving and dynamic relationship.
- It consists of open and committed communication (face-to-face and through e-media).
- It is built on mutual trust.
- Each party takes co-responsibility for the outcomes.
- The relationship exists against the background of a social contract which is manifested in, among other things, the project management plan.

The following stressors can often be found in most supervisor-student relationships:

- Professional work pressures
- Supervisors are sometimes allocated too many students
- The quality imperative requiring a dissertation/thesis to comply with international conventions on professional masters or doctoral degrees
- The need for full transparency of the research process and the expectations of a hyper-critical research and innovation community 'out there'
- Ethical considerations with regard to, e.g., plagiarism

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## **Section 5**

### **The Dissertation**

#### **General guidelines**

- The Research Office will provide all students with detailed guidelines on the conventional requirements for the dissertation, including a structure and the motivation for the dissertation.
- All students will attend four research methodology workshops in which they will be referred to information sources for undertaking research and drafting proposals.
- Normally students have 12 months to complete the dissertation, including research, analysis of results and drafting. (Note: Too often the time required to write the dissertation is underestimated and students start too late.)
- Both supervisors should explicitly, and in writing, give their approval for the student to submit the dissertation for examination.

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## The Dissertation: Requirements and Structure

A dissertation is a formal report on a good research project – flawed research cannot be disguised in an elegant report. However, good research can sometimes be obscured by poor structuring, language and technical editing and a general careless approach. It should communicate effectively with the relevant research, innovation, professional and employer communities. The structure would comply with standard conventions and it should be concise, i.e. normally not exceeding 80 pages. It is important that the dissertation should be professionally edited – language and technical aspects – and comply with The Da Vinci guidelines (see *Dissertation Guidelines*).

- Cover, title page and other front matter should comply with Da Vinci specifications.
- Abstract: Research objectives, research methodology, results, and conclusions/recommendations – not more than 350 words.
- Table of Contents: Properly structured, clearly shows section sequence and logic flow of dissertation. Its importance often underestimated; the Table of Contents clearly indicates the structure of the dissertation.
- Chapter 1 – Introduction: Rationale for the study; general statement of the problem; key research question/objectives stated explicitly; structure of the rest of the dissertation.
- Chapter 2 – Conceptual framework and literature review: Definition of key concepts and their relationship to each other (= theoretical framework); critical review of the relevant and recent literature.
- Chapter 3 - Research design: Operationalisation of concepts and research questions (also motivation for above); design (e.g. survey, case study, etc.); sources of data/information (e.g. people, documents); measures/instruments for data collection (e.g. questionnaire, interview, focus group, content analysis); statistical and other methods used for analysis of the data/information.
- Chapter 4 – Results: Presentation of results in explicit, transparent and systematic form and aligned to the description and hypotheses in the previous chapter; results should preferably not be interpreted and comprehensively discussed here – leave the reader to assess the results on his/her own.
- Chapter 5 – Discussion: Evaluation and discussion of the results within the context of rationale of the study, the conceptual framework, design and methods used; an assessment of the extent to which the objectives of the study have been attained, research questions been answered or hypotheses been proved. New perspectives can emerge in this chapter but not new information that should have been covered in earlier chapters. No new material should be added in ‘Discussion’ chapter.
- Chapter 6 – Implementation: Guidelines on how the findings (could be in the form of hard/soft technology and innovation) should be implemented for maximum impact.
- References - Use the adapted Harvard system described in the *Da Vinci Guide on literature review and referencing*. (If a source is worth listing, it should be cited in the text – a bibliography is redundant.)

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- Appendices: All relevant material that would not assist the reader to follow the text of the dissertation should be included in the appendix/ces. These normally include questionnaires and measuring instruments, short transcriptions (especially in the case of qualitative research approaches), preliminary illustrative material and data sets.

### **Submission of the dissertation**

- The dissertation should be submitted prior to the end of the valid registration period, or request extension in writing, according to the guidelines, prior to the end of the student's registration.
- Three soft bound copies to be submitted: One directly to the field supervisor, the other two to Da Vinci where it will be date stamped, and one will be sent to the academic supervisor and the third will be kept for the Da Vinci files.
- Where a student cannot submit for relevant medical reasons, a doctor's certificate must be supplied. (Note: Unacceptable reasons for late submission include: public and other holidays, loss of data files, and unavailability of computer facilities including printers, minor illnesses such as flu, poor programme management, and unavailability of supervisors.)

### **Examination**

The specific guidelines and differential weights of the individual components are available from the Research Office, but the following summary offers an overview of the elements of the examination process.

- The following weights are given to different components of the dissertation:
  - Quality of the academic content: 60%
  - Relevance and application to the work environment: 30%
  - Accounting for technology, innovation, people and systems (course work): 10%
- After the examination reports on the dissertation have been received from the supervisors, The Institute will organise an oral defence of the dissertation, to be attended simultaneously by both supervisors, as well as an audience of approximately five persons who are familiar with the topic, and/or its relevance. (*Guidelines for oral defence of a dissertation* will be made available by the Research Office.)
- The oral defence takes the form of a professional presentation by the student (45 minutes allowed for presentation), followed by a question and answer session. The total length of the oral defence should not exceed the time period of three hours (maximum time given to PhD candidate).
- The examination should take place within one month of the submission of the dissertation to The Da Vinci Research Office.
- The oral defence is based on the research work carried out by the student.
  - The oral defence counts 20% towards the final result

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- The marks for the oral presentation and the dissertation are allocated by the academic and field supervisors, at the conclusion of the presentation, in private. The decisions of the supervisors remain confidential until released by the Academic Board.
  - The research office will submit the mark sheets to the registrar.
  - Should the student not pass, he/she will be given one opportunity to improve the dissertation to meet the minimum standards. All students are given three months from notification to complete the adjustments.

Appendix 1 offers a summary of category descriptors for evaluating a dissertation. It should be noted that while it may appear to be biased towards empirical and quantitative research projects, the underlying dimensions are equally relevant to other research approaches.

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## Section 6

### The Thesis

#### General guidelines

- The Research Office will provide all students with detailed guidelines on the conventional requirements for the thesis, including a structure and the motivation for the thesis.
- All students need to attend four research methodology workshops in which they will be referred to information sources for undertaking research and drafting of the thesis.
- Normally students have 18 months to complete the thesis, including research, analysis of results and drafting. (Note: Too often the time required to write the thesis is underestimated and students start too late.)
- Both supervisors should explicitly, and in writing, give their approval for the student to submit the thesis for examination.

#### The Thesis: Requirements and Structure

A thesis is a formal report on a well-planned and evaluated research project – flawed research cannot be disguised in an elegant report. However, good research can sometimes be obscured by poor structuring, language and technical editing and a general careless approach. It should communicate effectively with the relevant research, innovation, professional and employer communities. The structure would comply with standard conventions and it should be concise, i.e. normally not exceeding 200 pages. It is important that the thesis must be professionally edited – language and technical aspects – and comply with Da Vinci guidelines (see *Thesis Guidelines*).

- Cover, title page and other front matter should comply with Da Vinci specifications.
- Abstract: Research objectives, research methodology, results, conclusions/recommendations – not more than 350 words.

- 
- Table of Contents: Properly structured, clearly shows section sequence and logic flow of dissertation. Its importance often underestimated; the Table of Contents clearly indicates the structure of the thesis.
  - Chapter 1 – Introduction: Rationale for the study; general statement of the problem; key research question/objectives stated explicitly; structure of the rest of the thesis.
  - Chapter 2 – Conceptual framework and literature review: Definition of key concepts and their relationship to each other (= theoretical framework); critical review of the relevant and recent literature.
  - Chapter 3 - Research design: Operationalisation of concepts and research questions (also motivation for above); design (e.g. survey, case study, etc.); sources of data/information (e.g. people, documents); measures/instruments for data collection (e.g. questionnaire, interview, focus group, content analysis); statistical and other methods used for analysis of the data/information.
  - Chapter 4 – Results: Presentation of results in explicit, transparent and systematic form and aligned to the description and hypotheses in the previous chapter; results should preferably be interpreted and comprehensively discussed here – leave the reader to assess the results on his/her own. New model generation and collection of inputs and outputs.
  - Chapter 5 – Discussion: Analysis and discussion of the results within the context of rationale of the study, the conceptual framework, design and methods used; an assessment of the extent to which the objectives of the study have been attained, research questions been answered or hypotheses been proved. New perspectives can emerge in this chapter but not new information that should have been covered in earlier chapters. No new material should be added in 'Discussion' chapter.
  - Chapter 6 – Implementation: Guidelines on how the findings (could be in the form of hard/soft technology and innovation) should be implemented for maximum impact.
  - Chapter 7 – Conclusion, Recommendation and Limitations
  - References - Use the adapted Harvard system described in the *Da Vinci Guide on literature review and referencing*. (If a source is worth listing, it should be cited in the text – a bibliography is redundant.)
  - Appendices: All relevant material that would not assist the reader to follow the text of the dissertation should be included in the appendix/ces. These normally include questionnaires and measuring instruments, short transcriptions (especially in the case of qualitative research approaches), preliminary illustrative material and data sets.

### Submission of thesis

- The thesis should be submitted prior to the end of the valid registration period, or the student can request extension in writing according to guidelines, prior to the end of the student's registration. A re-registration means that the student will be liable for the registration fees for this period.
- Four soft bound copies to be submitted: One directly to the field supervisor by the student, the other three copies to Da Vinci where it will be date stamped, and one will be sent to the

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academic supervisor and the one other copy to the external examiner and the fourth copy for Da Vinci record purposes

- Where a student cannot submit for relevant medical reasons, a doctor's certificate must be supplied. (Note: Unacceptable reasons for late submission include: public and other holidays, loss of data files, and unavailability of computer facilities including printers, minor illnesses such as flu, poor programme management, and unavailability of supervisors.)

## Examination

The specific guidelines and differential weights of the individual components are available from the Research Office, but the following summary offers an overview of the elements of the examination process.

- The following weights are given to different components of the dissertation:
  - Quality of the academic content: 60%
  - Relevance and application to the work environment: 30%
  - Accounting for technology, innovation, people and systems (course work): 10%
- After the examination reports on the thesis have been received from the supervisors and external examiner, the Institute will organise an oral defence of the thesis, to be attended simultaneously by both supervisors, as well as an audience of approximately five persons who are familiar with the topic, and/or its relevance. (*Guidelines for oral defence of a thesis* will be made available by the Student Research Office)
- The oral defence takes the form of a professional presentation by the student (45 minutes allowed for presentation), followed by a question and answer session. The total length of the oral defence should not exceed the time period of three hours (maximum time given to PhD candidate).
- The examination should take place within one month of the submission of the thesis to Da Vinci Research Office.
- The oral defence is based on the research work carried out by the student.
  - The oral defence counts 20% towards the final result
- The marks for the oral presentation and the dissertation are allocated by the academic and field supervisors, at the conclusion of the presentation, in a private manner. The decisions of the supervisors remain confidential until released by the Academic Board
- The research office will submit the consolidated mark sheets to the registrar.
- Should the student not pass, he/she will be given one opportunity to improve the thesis to meet the minimum required standards.
- All students are given three months from notification to complete the required and requested corrections and/or adjustments.

Appendix 2 offers a summary of category descriptors for evaluating a thesis. It should be noted that while it may appear to be biased towards empirical and quantitative research projects, the underlying dimensions are equally relevant to other research approaches.

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## Section 7

### Concluding comments

Supervisors are important role players in all forms of postgraduate research, irrespective of the nature of the institution. The importance of the role of supervisors can clearly be seen in the prominence of published analyses of the supervision function, recent textbooks on supervision, workshops on the topic and the fact that many institutions require supervisors to be accredited. The Da Vinci Institute for Technology Management also attaches a great deal of value to the contribution made by its pool of supervisors to the development of its students and their contribution to extending the borders of innovation through research. This concise document attempted to offer Da Vinci supervisors an overview of general and conventional guidelines, as well as requirements unique to Da Vinci. The nature of the supervision role is, however, a dynamic process that often generates unexpected outcomes and it would consequently be naive to pretend to cover the field in an exhaustive way in a document such as this. A guideline document will always be 'work-in-progress'. Supervisors are consequently invited to provide the Research Office with relevant perspectives, experiences and suggestions that could be accounted for in a revision of this document.

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## Section 8

### Source material

The guidelines presented in this publication are based on a combination of extensive experience in postgraduate training and supervision, self-initiated and commissioned research, draft Da Vinci guidelines, exposure to colleagues and, of course, consulting relevant publications. The last decade has produced a range of publications dealing with various facets of postgraduate training and supervision of which the following publications are useful and largely aligned to the general approach followed in the present Da Vinci document:

- Hofstee, E. 2006. *Constructing a good dissertation. A practical guide to finishing a masters, MBA or PhD on schedule*. Sandton: EPE.
- Lategan, L.O.K. (Ed) 2008. *An introduction to postgraduate supervision*. Stellenbosch: Sun Press
- Lee, N.J. 2009. *Achieving your professional doctorate: A handbook*. New York: SRHE Open University Press.
- Lessem, R and Scheiffer, A. In Print. *Integral Research and innovation: Transforming your society through Research leading to Innovation* .
- Mouton, J. 2001. *How to succeed in your master's and doctoral studies: A South African guide and resource book*. Pretoria: Van Schaik.
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## Appendix 1: Descriptors for Allocating Marks for a Dissertation

[Please note that the descriptors in each case represent the lower end of the particular rating scale]

Mark Level	Comprehension & Analysis	Coverage	Presentation
75+ Distinction	<ul style="list-style-type: none"> <li>Near to total mastery of all aspects of the subject matter (conceptual understanding, research technical competence, evaluation, interpretation and application)</li> <li>Pervasive creativity and originality of thought</li> <li>Substantiated critical approach to all aspects of the study</li> <li>Multiple examples of independent thought</li> <li>Validity of main findings are beyond any doubt and far-reaching</li> <li>Ability to apply/implement findings</li> <li>Publishable quality with no more than minor revisions</li> </ul>	<ul style="list-style-type: none"> <li>All objectives are fully covered</li> <li>Exhaustive coverage of relevant material; beyond the scope of master's</li> <li>In short: 'going beyond'</li> </ul>	<ul style="list-style-type: none"> <li>Exceptional written communication skills with faultless composition, grammar and spelling.</li> <li>Excellent structured, effective lay-out and design to comply with topic and content</li> <li>Faultless technical and language editing</li> <li>Professionally produced document</li> <li>In short: excellent and convincing communication</li> </ul>
60-74 Very good pass	<ul style="list-style-type: none"> <li>Sound and thorough grasp of the subject matter though lacking in the breadth and depth (there are a few gaps leading to some shortfalls)</li> <li>Limited examples of substantiated critical approach and some attempt at original thought</li> <li>Validity of main findings are acceptable but limited in reach</li> <li>Sensitivity to practical implications of the findings of the study</li> <li>With additional inputs the work may be publishable</li> </ul>	<ul style="list-style-type: none"> <li>Most major objectives are covered</li> <li>Comprehensive coverage of primary sources and relevant material</li> <li>In short: 'worth investing in for the future'; expected to proceed to Ph D</li> </ul>	<p>Effective presentation,</p> <ul style="list-style-type: none"> <li>Generally good written communication skills with good spelling and grammar</li> <li>Structure, lay-out and design good but not exceptional; room for improvement here and there</li> <li>Technical and language editing done but minor errors slipped through</li> </ul>

Mark Level	Comprehension & Analysis	Coverage	Presentation
50-59 Pass	<ul style="list-style-type: none"> <li>• Sufficient understanding of the subject matter with some uncertainty/confusion, gaps and peripheral errors</li> <li>• Direct reflection of what is already known without much creativity and originality</li> <li>• Moderate to weak demonstration of critical abilities and independent thought</li> <li>• Findings are essentially sound, but limited; interpretations do not optimally exploit them; unsubstantiated interpretations may occur</li> <li>• Recommendations relate to the findings, without exploiting their full reach; sensitivity to the need for implementation</li> </ul>	<ul style="list-style-type: none"> <li>• The basic requirements of the work are covered</li> <li>• Limited coverage of required sources and relevant material</li> <li>• In short: 'just the required' for postgraduate research</li> </ul>	<ul style="list-style-type: none"> <li>• Effective written communication skills lacking imagination, though</li> <li>• Satisfactory overall structure, reasonable layout and design</li> <li>• Adequate technical and language editing, but too many lapses</li> </ul>
40-49 Refer back for essential amendment	<ul style="list-style-type: none"> <li>• Showing familiarity with the subject matter, but with major gaps and serious misconceptions</li> <li>• A low level of technical competence with many errors. An incomplete and/or partially correct answer</li> <li>• There is some evidence that concepts and theory are understood and there is a modest attempt to analyse them</li> <li>• There is a tendency towards uncritical description/replication and very little to no evidence of original ideas</li> <li>• There is little discussion on the application of knowledge, few, if any, conclusions drawn and recommendations for improvement are either missing or unsubstantiated</li> </ul>	<ul style="list-style-type: none"> <li>• Some of the basic requirements of the work have not been covered</li> <li>• Limited coverage of relevant material with over-reliance on secondary sources</li> <li>• Few, if any, examples used. Few references cited. Little evidence that any reading around the subject has been carried out</li> </ul>	<ul style="list-style-type: none"> <li>• Less than optimal presentation, lacking in logical structure, making it difficult to read. Ideas are poorly expressed, often with mistakes. There are errors in grammar and/or spelling</li> <li>• Diagrams, contents sheet, page numbering, references and bibliography may be poorly presented or some missing</li> </ul>

<p>&lt;40 Fail</p>	<ul style="list-style-type: none"> <li>• Showing serious gaps in knowledge of the subject matter and many areas of confusion</li> <li>• Technical competence is poor with many serious errors and there is an inability to apply knowledge</li> <li>• Does not demonstrate understanding of the issue and information/data used may be irrelevant</li> <li>• Overall not a document that the company/ university would wish to have its name on</li> <li>• Little or no evidence that concepts and theory have been understood and little or no attempt at sustained analysis</li> <li>• There is a lack of critical appreciation and often the question has been ignored or badly misunderstood</li> <li>• Does not demonstrate the ability to appropriately apply tools/techniques/ methodologies</li> </ul>	<ul style="list-style-type: none"> <li>• Few or none of the basic requirements of the work have been achieved</li> <li>• Inadequate/superficial coverage of relevant material and little use of even course material</li> <li>• Little or no indication of the student's own efforts and contribution. Hardly any references used</li> </ul>	<ul style="list-style-type: none"> <li>• Poor or muddled presentation and structuring of arguments. The level of expression is inadequate, often being unclear or confused. Poor grammar and/or spelling</li> <li>• Diagrams, contents sheet, page numbering, references and bibliography poorly presented or missing</li> </ul>
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## Appendix 2: Descriptors for Allocating Marks for a Thesis

[Please note that the descriptors in each case represent the lower end of the particular rating scale]

Mark Level	Comprehension & Analysis	Coverage	Presentation
75+ Degree awarded	<ul style="list-style-type: none"> <li>Near to total mastery of all aspects of the subject matter (conceptual understanding, research technical competence, evaluation, interpretation and application)</li> <li>Pervasive creativity and originality of thought</li> <li>Substantiated critical approach to all aspects of the study</li> <li>Multiple examples of independent thought</li> <li>Validity of main findings are beyond any doubt and far-reaching</li> <li>Ability to apply/implement findings</li> <li>Publishable quality with no more than minor revisions</li> </ul>	<ul style="list-style-type: none"> <li>All objectives are fully covered</li> <li>Exhaustive coverage of relevant material; beyond the scope of master's</li> <li>In short: 'going beyond'</li> </ul>	<ul style="list-style-type: none"> <li>Exceptional written communication skills with faultless composition, grammar and spelling.</li> <li>Excellent structured, effective lay-out and design to comply with topic and content</li> <li>Faultless technical and language editing</li> <li>Professionally produced document</li> <li>In short: excellent and convincing communication</li> </ul>
60-74 Degree awarded	<ul style="list-style-type: none"> <li>Sound and thorough grasp of the subject matter though lacking in the breadth and depth (there are a few gaps leading to some shortfalls)</li> <li>Limited examples of substantiated critical approach and some attempt at original thought</li> <li>Validity of main findings are acceptable but limited in reach</li> <li>Sensitivity to practical implications of the findings of the study</li> <li>With additional inputs the work may be publishable</li> </ul>	<ul style="list-style-type: none"> <li>Most major objectives are covered</li> <li>Comprehensive coverage of primary sources and relevant material</li> <li>In short: 'worth investing in for the future'; expected to proceed to Ph D</li> </ul>	<p>Effective presentation,</p> <ul style="list-style-type: none"> <li>Generally good written communication skills with good spelling and grammar</li> <li>Structure, lay-out and design good but not exceptional; room for improvement here and there</li> <li>Technical and language editing done but minor errors slipped through</li> </ul>

Mark Level	Comprehension & Analysis	Coverage	Presentation
50-59 Degree awarded	<ul style="list-style-type: none"> <li>• Sufficient understanding of the subject matter with some uncertainty/confusion, gaps and peripheral errors</li> <li>• Direct reflection of what is already known without much creativity and originality</li> <li>• Moderate to weak demonstration of critical abilities and independent thought</li> <li>• Findings are essentially sound, but limited; interpretations do not optimally exploit them; unsubstantiated interpretations may occur</li> <li>• Recommendations relate to the findings, without exploiting their full reach; sensitivity to the need for implementation</li> </ul>	<ul style="list-style-type: none"> <li>• The basic requirements of the work are covered</li> <li>• Limited coverage of required sources and relevant material</li> <li>• In short: 'just the required' for postgraduate research</li> </ul>	<ul style="list-style-type: none"> <li>• Effective written communication skills lacking imagination, though</li> <li>• Satisfactory overall structure, reasonable layout and design</li> <li>• Adequate technical and language editing, but too many lapses</li> </ul>
40-49 Refer back for essential amendment	<ul style="list-style-type: none"> <li>• Showing familiarity with the subject matter, but with major gaps and serious misconceptions</li> <li>• A low level of technical competence with many errors. An incomplete and/or partially correct answer</li> <li>• There is some evidence that concepts and theory are understood and there is a modest attempt to analyse them</li> <li>• There is a tendency towards uncritical description/replication and very little to no evidence of original ideas</li> <li>• There is little discussion on the application of knowledge, few, if any, conclusions drawn and recommendations for improvement are either missing or unsubstantiated</li> </ul>	<ul style="list-style-type: none"> <li>• Some of the basic requirements of the work have not been covered</li> <li>• Limited coverage of relevant material with over-reliance on secondary sources</li> <li>• Few, if any, examples used. Few references cited. Little evidence that any reading around the subject has been carried out</li> </ul>	<ul style="list-style-type: none"> <li>• Less than optimal presentation, lacking in logical structure, making it difficult to read. Ideas are poorly expressed, often with mistakes. There are errors in grammar and/or spelling</li> <li>• Diagrams, contents sheet, page numbering, references and bibliography may be poorly presented or some missing</li> </ul>

<p>&lt;40 Fail</p>	<ul style="list-style-type: none"> <li>• Showing serious gaps in knowledge of the subject matter and many areas of confusion</li> <li>• Technical competence is poor with many serious errors and there is an inability to apply knowledge</li> <li>• Does not demonstrate understanding of the issue and information/data used may be irrelevant</li> <li>• Overall not a document that the company/ university would wish to have its name on</li> <li>• Little or no evidence that concepts and theory have been understood and little or no attempt at sustained analysis</li> <li>• There is a lack of critical appreciation and often the question has been ignored or badly misunderstood</li> <li>• Does not demonstrate the ability to appropriately apply tools/techniques/ methodologies</li> </ul>	<ul style="list-style-type: none"> <li>• Few or none of the basic requirements of the work have been achieved</li> <li>• Inadequate/superficial coverage of relevant material and little use of even course material</li> <li>• Little or no indication of the student's own efforts and contribution. Hardly any references used</li> </ul>	<ul style="list-style-type: none"> <li>• Poor or muddled presentation and structuring of arguments. The level of expression is inadequate, often being unclear or confused. Poor grammar and/or spelling</li> <li>• Diagrams, contents sheet, page numbering, references and bibliography poorly presented or missing</li> </ul>
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