Master of Science in Information Technology
Contents

1. Introduction 2
2. Mission Statement 2
3. Curriculum 2
4. IS Project 5
5. Internship 6
6. Convocations 7
7. Academic Integrity 7
CARNEGIE MELLON UNIVERSITY IN AUSTRALIA
MASTER OF SCIENCE IN INFORMATION TECHNOLOGY
POLICIES AND GUIDELINES

1. INTRODUCTION

This handbook provides specific information on the curriculum and program requirements for the Master of Science in Information Technology Program. CMU-A also publishes a separate handbook which details campus-wide policies and procedures pertaining to educational planning, program committee, teaching, scheduling and course credit, performance standards, academic standing, ethics and discipline, student privacy rights and major forms and deadlines. Students should familiarize themselves with both handbooks as they include information that is critical for your success. Both handbooks can be obtained through the Senior Director of Academic Institutional Development and via the CMU-A website and portal.

2. MISSION STATEMENT

The mission of the Master of Science in Information Technology Program (MSIT) is to prepare mid-career IT professionals to lead change in their organizations. Carnegie Mellon’s MSIT is an elite graduate degree program that equips students with an integration of information technology and management skills. Students in the MSIT program should be able to:

- Combine management and technology skills gained in the classroom that can be directly applied in a professional IT environment; and
- Create organizational value through the effective deployment of IT.

We achieve this mission through:

- fine tuning our curriculum and our student selection to optimize our role of being a bridge between technology and management; and
- enhancing the curriculum through the intelligent use of synchronous, distance and part-time learning practices; and
- building and sustaining a culture that prizes entrepreneurship and innovation in information technology and its management and application.

3. CURRICULUM

**MSIT-Information Technology Management**

Our MSIT-ITM program features a unique interdisciplinary curriculum of analytical and quantitative studies. Students are empowered to customise their degree by selecting from a variety of course electives carried out via coursework and independent study. We are widely recognised for our unique interdisciplinary environment, encouraging work across departmental lines. As a result, our MSIT graduates enter the world with the ability to solve complex problems.

The MSIT program requires you to study 168 units in total comprising of 120 units worth of core courses (including a 24-unit Information System Project) and 48 units of elective courses and a 12 week internship. The combination of courses and real-world experience through the Information Systems Project and Internship, allows you to tailor the program to your career and interest needs by selecting relevant elective course whilst studying core courses which provide a core foundation of skills and knowledge.
Full-time students complete the program over five study periods. Students may commence in either January or August intakes. Each study period is the equivalent to 4 months of study and usually comprises of 48 units worth of courses. Each course is awarded either 6 or 12 unit weighting which is approximately equivalent to 1 week of study. Therefore you can study a combination of 6 and 12 unit courses to meet your program requirements.

Part-time students have up to five years to complete their program however, most complete the program in two to three years.

For successful completion of the MSIT-ITM program, you must complete 168 units total:

- complete 120 units of core requirements (including a 24-unit Information Systems Project)
- complete 48 units of electives
- complete a 10-12 week internship
- achieve an overall grade point average of at least 3.0

### Core courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>95-712</td>
<td>Object Oriented Programming in Java</td>
<td>12</td>
</tr>
<tr>
<td>95-706</td>
<td>Object-Oriented Analysis and Design</td>
<td>6</td>
</tr>
<tr>
<td>95-703</td>
<td>Database Management</td>
<td>12</td>
</tr>
<tr>
<td>95-733</td>
<td>Internet Technologies</td>
<td>6</td>
</tr>
<tr>
<td>95-705</td>
<td>Telecommunications Management</td>
<td>12</td>
</tr>
<tr>
<td>95-730</td>
<td>E-Business Technologies and Management</td>
<td>12</td>
</tr>
<tr>
<td>91-800</td>
<td>Organizational Design and Implementation</td>
<td>6</td>
</tr>
<tr>
<td>95-700</td>
<td>Internship</td>
<td>0</td>
</tr>
<tr>
<td>95-808</td>
<td>IT Project Management</td>
<td>6</td>
</tr>
<tr>
<td>95-715</td>
<td>Financial Accounting</td>
<td>6</td>
</tr>
<tr>
<td>94-702</td>
<td>Professional Writing</td>
<td>6</td>
</tr>
<tr>
<td>91-718</td>
<td>Strategic Presentation Skills</td>
<td>6</td>
</tr>
<tr>
<td>95-716</td>
<td>Principles of Finance</td>
<td>6</td>
</tr>
<tr>
<td>95-720</td>
<td>IS Project</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td><strong>Total core:</strong></td>
<td><strong>120</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Electives:</strong></td>
<td><strong>48</strong></td>
</tr>
</tbody>
</table>

### MSIT-ITM with Business Intelligence Data Analytics Certification

Students studying in the Master of Science in Information Technology (MSIT-ITM) 21 month program are able to undertake a Business Intelligence and Data Analytics (BIDA) Concentration as part of their program. The BIDA Concentration combines a comprehensive information technology and management curriculum with BIDA courses, a compulsory 12-14 week internship program and an industry-based Data Analytics Capstone Project. Students studying the BIDA Concentration graduate with two qualifications, Master of Science in Information Technology (MSIT-ITM) and a Graduate Certificate in Business Intelligence and Data Analytics (BIDA).
The BIDA concentration in an intense program of study and requires dedicated effort and strong technical skills in programming and database development. For successful completion of the MSIT-ITM BIDA Concentration program, you must complete 168 units total:

- complete 84 units of core MSIT-ITM requirements (including a 12-unit Data Analytics Project)
- complete 66 units of core BIDA requirements (concentration)
- complete 18 units of elective courses
- complete a 12 - 14 week internship
- achieve an overall grade point average of at least 3.0

### Core Courses

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<td>95-716</td>
<td>Principles of Finance</td>
<td>6</td>
</tr>
<tr>
<td>95-796</td>
<td>Statistics for IT Managers</td>
<td>6</td>
</tr>
<tr>
<td>95-791</td>
<td>Data Mining</td>
<td>6</td>
</tr>
<tr>
<td>95-852</td>
<td>Applied Data Science</td>
<td>6</td>
</tr>
<tr>
<td>95-760</td>
<td>Decision Making Under Uncertainty</td>
<td>6</td>
</tr>
<tr>
<td>95-865</td>
<td>Text Analytics</td>
<td>6</td>
</tr>
<tr>
<td>95-720</td>
<td>Data Analytics Capstone Project</td>
<td>12</td>
</tr>
<tr>
<td>95-868</td>
<td>Programming in R</td>
<td>6</td>
</tr>
<tr>
<td>95-797</td>
<td>Data Warehousing</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td><strong>Total core:</strong></td>
<td><strong>150</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Electives</strong></td>
<td><strong>18</strong></td>
</tr>
</tbody>
</table>


4. **IS PROJECT**

Project courses are organized around significant management problems, the solution of which requires a mix of technological, organizational, and social skills. As opposed to the traditional classroom setting, project courses are organized as an exercise in group problem solving. During their final semester of study, students are divided into teams guided by faculty.

**Organization of IS Projects**

The faculty member who supervises a project maintains relations with the client, directs and critiques the students’ work, coaches them for their presentations, and grades the students on their contributions to the projects as well as grading the overall projects.

IS Projects involve both oral and written work. Generally, each project makes at least one oral presentation to the client per semester; this presentation is open to the public and is advertised accordingly. Each student should participate in at least one oral presentation to the client. In addition, groups must produce an interim report and a final report. Each student should write a significant and identifiable section of the report and perform some nontrivial analysis, even if these efforts have to be improved upon by other members of the group before being included in a report to the client. The written report is expected to be of high quality but also produced on time. Each group must submit an electronic and hard copy of the final report to the Director of Programs.

**Development of IS Projects**

Typically, in the semester preceding the IS Project, proposals are generated by faculty and by organizations external to the College. Proposals may be initiated by students with an interest in a particular problem.

**Assignment of Students to Projects**

Students normally enroll in a project of their interest. Project groups are formed in the semester preceding the IS Project.

**Grading of IS Projects**

Students will receive an IS Project grade based on individual and group performance. In any group project there is an inherent tension between rewarding individual and group performance. This tension is in part by design, as it reflects some of the realities of group staff work in public and private organizations.

Grades in IS Projects are a combination of individual and group considerations. It is generally desirable that students perform multiple roles in projects, and it is recommended that faculty and student evaluations consider these various contributions.

5. **INTERNSHIP**

**Overview**

Students are required to undertake a 12-14 week internship in the 3\textsuperscript{rd} or 4\textsuperscript{th} semester. Students may intern with a company that: (1) corresponds to a field of interest or specialization area pre-existing within the program and (2) represents a variety of industry sectors including consulting, software companies, finance, and other types. Positions may also vary from IT managers, to security consultants, to business analysts, to applications engineers, and others.

The internship duties must have significant educational value that directly relates to the program. The internship will train students in ways significantly different from classroom instruction. By working in a
professional environment, students will solidify mastery of knowledge gained in coursework, refine career interests, and establish personal networks which might lead to later career opportunities. The internship also provides the faculty with feedback about the relevance of the curriculum and the effectiveness of the teaching program.

Students will not receive academic credit for the internship but it will be reflected on their academic transcript as a course with Pass/No Pass grade. The Internship form needs to be approved before the beginning of the internship by the Senior Director of Academic and Institutional Development.

**Securing an Internship**

Students are responsible for securing a suitable internship. The Programs team provides assistance through counseling, workshops on resume preparation and interview skills, and listings of potential internships. Students can discuss their situation on a one to one basis and are encouraged to attend workshops that cover the essential skills for finding the right internship.

**Internship Standards**

Students must complete an internship as an integral part of the degree program. Minimally, this requires the equivalent of 12 weeks of full time employment in a technical, managerial, or administrative position with a satisfactory evaluation by the supervisor of the internship. Before a student begins their internship, they must file an Internship Approval Form with the Senior Director of Academic and Institutional Development and receive approval for the internship. Students will not be permitted to graduate if they accept or begin work at an internship which does not meet the program standards.

During the course of the internship, the Senior Director of Academic and Institutional Development will contact the supervisor to discuss students’ progress. The Senior Director of Academic and Institutional Development will also get in touch with a student during their internship to discuss their progress and any problems that arise. Students must notify the Senior Director of Academic and Institutional Development of any significant changes to the internship, such as length, location, hours of work.

At the end of the internship, the Senior Director of Academic and Institutional Development will request that the supervisor complete an evaluation form about the intern’s performance. They will also ask interns for a one-page self-evaluation of how the internship fulfilled the educational goals of the program and a short description of the employing organization, including a list of contact names, tasks and responsibilities that were cultivated. The Senior Director of Academic and Institutional Development will discuss these evaluations with each student personally to provide the appropriate feedback.

Based on the supervisor’s evaluation, the contact between the supervisor and the student, and the self-evaluation, the Senior Director of Academic and Institutional Development will advise the Faculty Committee if a student has satisfactorily completed the internship requirement. If a student does not successfully complete an eligible internship, they will have to complete one before they will be eligible to graduate.

The Senior Director of Academic and Institutional Development encourages students to advise any job opportunities within the internship organization which might be available for future graduates or interns. These descriptions will be maintained for reference by both first and second year students.
6. CONVOCATIONS

Convocation is a regular forum in which students have an opportunity to discuss and learn about a variety of issues. The purpose of CMUA convocation program is to inspire, motivate and open student’s thoughts to new ideas and areas. While topics are concentrated in the areas IT and PPM, the university actively seeks leaders that are leaders in their fields and have something to contribute to all-around education for our students from convocations. Sessions feature guest speakers, including those who lead organisations, analyse and develop policy as well as those who innovate in non-traditional ways.

This is a zero-credit course, with no assignments, but required attendance.

7. ACADEMIC INTEGRITY

Plagiarism and other forms of academic misrepresentation are viewed as extremely serious matters. Misrepresentation of another’s work as one’s own is widely recognized as among the most serious violations. The violation is clearly flagrant when it occurs as plagiarism on a required paper or as cheating on an examination, including take-home as well as in-class examinations. The punishment for such offenses can involve being dropped from your program. There are many other ways in which violations can occur. The circumstances and the rules may vary for different courses, and each instructor will establish his or her own rules for a particular course. Each student is responsible for understanding these rules.

The University policy on Cheating and Plagiarism is posted on Carnegie Mellon’s website at: http://www.cmu.edu/student-affairs/theword/acad_standards/integrity.html.

For comprehensive information and resources regarding Academic Integrity please go to: www.cmu.edu/academic-integrity

Definitions
The University’s definition for cheating and plagiarism and should be reviewed in its entirety on-line: http://cmu.edu/policies/documents/Cheating.html

Cheating occurs when a student avails her/himself of an unfair or disallowed advantage which includes but is not limited to:

1. Theft of or unauthorized access to an exam, answer key or other graded work from previous course offerings.
2. Use of an alternate, stand-in or proxy during an examination.
3. Copying from the examination or work of another person or source.
4. Submission or use of falsified data.
5. Using false statements to obtain additional time or other accommodation.
6. Falsification of academic credentials.

Plagiarism is defined as the use of work or concepts contributed by other individuals without proper attribution or citation. Unique ideas or materials taken from another source for either written or oral use must be fully acknowledged in academic work to be graded. Examples of sources expected to be referenced include but are not limited to:
Unauthorized assistance refers to the use of sources of support that have not been specifically authorized in this policy statement or by the course instructor(s) in the completion of academic work to be graded. Such sources of support may include but are not limited to advice or help provided by another individual, published or unpublished written sources, and electronic sources. Examples of unauthorized assistance include but are not limited to:

1. Collaboration on any assignment beyond the standards authorized by this policy statement and the course instructor(s).
2. Submission of work completed or edited in whole or in part by another person.
3. Supplying or communicating unauthorized information or materials, including graded work and answer keys from previous course offerings, in any way to another student.
4. Use of unauthorized information or materials, including graded work and answer keys from previous course offerings.
5. Use of unauthorized devices.
6. Submission for credit of previously completed graded work in a second course without first obtaining permission from the instructor(s) of the second course. In the case of concurrent courses, permission to submit the same work for credit in two courses must be obtained from the instructors of both courses.

**University Procedures for Dealing with Academic Integrity Violations**

Carnegie Mellon's policy on Academic Disciplinary Actions Overview for Graduate Students is the university procedure that describes procedures for disciplinary actions against graduate students in cases of alleged violations of academic regulations.

This procedure should be reviewed in its entirety on-line:

http://www.cmu.edu/academic-integrity/documents/academic-disciplinary-actions-overview-for-graduate-students.2013.pdf

In any presentation, creative, artistic or research, it is the ethical responsibility of each student to identify the conceptual sources of the work submitted. Failure to do so is dishonest and is the basis for a charge of cheating or plagiarism, which is subject to disciplinary action.

If a student fails a course because of a cheating violation and then retakes the course, both the failing grade and the new grade will be used in evaluations of academic standing and the calculation of the student's QPA.

Any student who violates the academic integrity policy may not be a Student Representative, Teaching Assistant, Officer of a student club/organization and cannot graduate from the college with highest distinction or distinction or serve as commencement speaker. Per University policy, all academic integrity
violations will be reported to the Heinz College Associate Dean and Carnegie Mellon’s Dean of Student Affairs.

Cases of cheating and plagiarism will be reviewed by the Dean, who may impose additional penalties. Students should understand clearly that such offenses are not tolerated at Carnegie Mellon. A first offense could result in being dropped from your program. In the event of a second offense, you will be dropped from your program.

Generally, sanctions resulting from an Academic Disciplinary Action take effect immediately, regardless of whether an appeal is filed.

**Additional requirement at Carnegie Mellon University Australia campus**

All students enrolling for programs at the campus in Adelaide are required to attend one of the two sessions programmed on Academic Integrity during their Orientation Week. At the end of that session, students will be asked to sign two documents. The first is an acknowledgement that they have attended the session. The second is an acknowledgement that they have understood the information presented on both the definitions of violations of academic integrity and the consequences of those violations.

Questions regarding the graduate policies and/or procedures pertaining to cheating and plagiarism should be directed to Professor Tim O’Loughlin at 8110 9923, 0419 822 915 or toloughlin@australia.cmu.edu

**Summary of practical actions**

The actions students should take are:

- Make sure you understand the definitions of cheating, plagiarism and unauthorized assistance as set out in this document
- Study carefully the specific requirements of each course instructor as set out in the outline for each course. If in any doubt, raise queries with the instructor at the earliest opportunity
- Familiarise yourself with the consequences of breaches of academic integrity
- Refer any questions of the general policies referred to in this document to Professor Tim O’Loughlin, Senior Director, Academic and Institutional Development.