ICT 711 PROGRAMMING AND ALGORITHMS T322

All information in the Subject Outline is correct at the time of approval. KOI reserves the right to make changes to the Subject Outline if they become necessary. Any changes require the approval of the KOI Academic Board and will be formally advised to those students who may be affected by email and via Moodle.
Information contained within this Subject Outline applies to students enrolled in the trimester as indicated

1. General Information

1.1 Administrative Details

Associated HE Award(s)	Duration	Level	Subject Coordinator
Master of Information Technology (MIT) Graduate Diploma of Information Technology (GDIT) Graduate Certificate of Information Technology (GCIT)	1 trimester	Postgraduate	Dr Ali Anaissi ali.anaissi@koi.edu.au P: +61 (2) 9283 3583 L: Level 1-2, 17 O'Connell St. Consultation: via Moodle or by appointment.

1.2 Core/Elective

This subject is:
- a core subject for the Master of Information Technology (MIT)
- a core subject for the Graduate Diploma of Information Technology (GDIT)
- a core subject for the Graduate Certificate of Information Technology (GCIT)

1.3 Subject Weighting

Indicated below is the weighting of this subject and the total course points.

Subject Credit Points	Total Course Credit Points
4	MIT (64 Credit Points); GDIT (32 Credit Points); GCIT (16 Credit Points);

1.4 Student Workload

Indicated below is the expected student workload per week for this subject

No. Timetabled Hours/Week*	No. Personal Study Hours/Week**	Total Workload Hours/Week***
3 hours/week plus supplementary online material	7 hours/week	10 hours/week

* Total time spent per week at lectures and tutorials
** Total time students are expected to spend per week in studying, completing assignments, etc.
*** Combination of timetable hours and personal study

1.5 Mode of Delivery Face-to-face unless otherwise notified (please Moodle). Note - in T322, KOI is in transition and most classes will be returning to face-to-face delivery. However, there are a range of issues remaining because of COVID-19. For example, some students may have trouble travelling to Australia. Because of this some classes may still be online. This affects whether the final exam for a subject will be open-book or closed-book. After enrolment KOI will be able to make a determination and notification will be provided on Moodle before Week 7.

1.6 Pre-requisites Nil

1.7 General Study and Resource Requirements

- Students are expected to attend classes with the weekly worksheets and subject support material provided in Moodle. Students should read this material before coming to class to improve their ability to participate in the weekly activities.
- Students will require access to the internet and their KOI email and should have basic skills in word processing software such as MS Word, spreadsheet software such as MS Excel and visual presentation software such as MS PowerPoint.
- Computers and WIFI facilities are extensively available for student use throughout KOI. Students are encouraged to make use of the campus Library for reference materials.

Software resource requirements specific to this subject: JDK 8 and NetBeans IDE, Eclipse IDE, Office 365, MS Imagine.

2. Academic Details

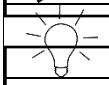
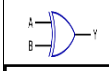
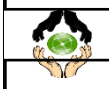
2.1 Overview of the Subject

This subject extends the coverage of programming basics to concepts of exception handling, advanced arrays, inheritance for program design and implementation in Java. Program design and complexities of different algorithms are evaluated to assist in problem solving. An object-oriented framework is employed to develop a deeper knowledge of computational problem-solving through the use of established algorithms and programming methodologies, strategies and techniques.

2.2 Graduate Attributes for Postgraduate Courses

Graduates of postgraduate courses from King's Own Institute will achieve the graduate attributes expected from successful completion of a postgraduate degree under the Australian Qualifications Framework (2nd edition, January 2013). Graduates at this level will be able to apply advanced body of knowledge from their major area of study in a range of contexts for professional practice or scholarship and as a pathway for further learning.

King's Own Institute's generic graduate attributes for a master's level degree are summarised below:

	KOI Postgraduate Degree Graduate Attributes	Detailed Description
	Knowledge	Current, comprehensive and coherent knowledge, including recent developments and applied research methods
	Critical Thinking	Critical thinking skills to identify and analyse current theories and developments and emerging trends in professional practice
	Communication	Communication and technical skills to analyse and theorise, contribute to professional practice or scholarship, and present ideas to a variety of audiences
	Research and Information Literacy	Cognitive and technical skills to access and evaluate information resources, justify research approaches and interpret theoretical propositions
	Creative Problem Solving Skills	Cognitive, technical and creative skills to investigate, analyse and synthesise complex information, concepts and theories, solve complex problems and apply established theories to situations in professional practice
	Ethical and Cultural Sensitivity	Appreciation and accountability for ethical principles, cultural sensitivity and social responsibility, both personally and professionally
	Leadership and Strategy	Initiative, leadership skills and ability to work professionally and collaboratively to achieve team objectives across a range of team roles Expertise in strategic thinking, developing and implementing business plans and decision making under uncertainty

	Professional Skills	High level personal autonomy, judgement, decision-making and accountability required to begin professional practice

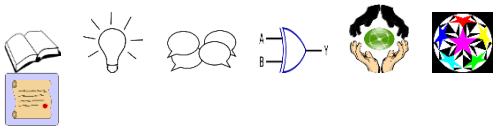
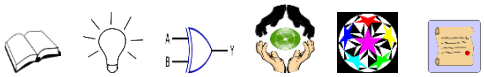
Across the course, these skills are developed progressively at three levels:

- **Level 1 Foundation –** Students learn the skills, theories and techniques of the subject and apply them in stand-alone contexts
- **Level 2 Intermediate –** Students further develop skills, theories and techniques of the subject and apply them in more complex contexts, beginning to integrate the application with other subjects.
- **Level 3 Advanced** – Students have a demonstrated ability to plan, research and apply the skills, theories and techniques of the subject in complex situations, integrating the subject content with a range of other subject disciplines within the context of the course.

Generally, skills gained from subjects in the Graduate Certificate and Graduate Diploma are at levels 1 and 2 while other subjects in the Master's degree are at level 3.

2.3 Subject Learning Outcomes

Listed below, are key knowledge and skills students are expected to attain by successfully completing this subject:

Subject Learning Outcomes	Contribution to Graduate Attributes
a) Apply object-oriented programming principles, methods, and techniques using Java	
b) Construct and evaluate different algorithms and data structures including searching and sorting algorithms and linked list structures	
c) Critically analyse and design a medium-sized application according to the given requirements and communicate programming solutions and their derivation	
d) Implement and test a medium-sized application according to the given requirements	

2.4 Subject Content and Structure

Below are details of the subject content and how it is structured, including specific topics covered in lectures and tutorials. Reading refers to the text unless otherwise indicated.

Weekly Planner:

Week (beginning)	Topic covered in each week's lecture	Reading(s)	Expected work as listed in Moodle
1 31 Oct	Overview of basic Java programming principles	Chs. 1, 2, 3 [J. Farrell]	**Java application group project introduced** Tutorial exercises on designing and running Java programs with basic data types. Formative graded
2 07 Nov	Overview of basic Java programming principles 2	Chs. 4, 5, 6 [J. Farrell]	**Discussion and demonstration of Java application group project** Tutorial exercises on designing

Week (beginning)	Topic covered in each week's lecture	Reading(s)	Expected work as listed in Moodle
			and running Java programs with basic control structures. Summative graded
3 14 Nov	Introduction to algorithms and complexities	Chs. 1, 2 [J. Cutajar]	**Discussion and demonstration of Java application group project** Tutorial exercises on identifying algorithms with different complexities and sorting algorithms. Summative graded
4 21 Nov	Arrays	Ch. 8 [J. Farrell]	**Discussion and demonstration of Java application group project** Tutorial exercises on for and while loops for effective repetition of code execution. Summative graded
5 28 Nov	Advanced array concepts	Ch. 9 [J. Farrell]	**Discussion and demonstration of Java application group project** Tutorial exercises on sorting arrays and using arrays class. Summative graded
6 05 Dec	Fundamental data structures	Ch. 2 [J. Cutajar]	Tutorial exercises on linked lists, queues and stacks operation. Summative graded **Mid trimester test**
7 12 Dec	Algorithm design paradigm	Ch. 5 [J. Cutajar]	**Discussion and demonstration of Java application group Project** Tutorial exercises on greedy algorithms, divide and conquer and dynamic programming. Summative graded
8 03 Jan (Tue)	Introduction to inheritance	Ch. 10 [J. Farrell]	**Feedback on draft submission of Java application group project** Tutorial exercises on diagramming inheritance using UML. Summative graded **Assessment 3: Draft due**
9 09 Jan	Exception handling	Ch. 12 [J. Farrell]	**Discussion and demonstration of Java application group project** Tutorial exercises on throwing and catching exceptions, call stack, and Assertions. Summative graded **Deferred mid trimester exams** - see Section 2.6 below for more information

Week (beginning)	Topic covered in each week's lecture	Reading(s)	Expected work as listed in Moodle
10 16 Jan	Graphical user interface (GUI)	Chs. 14, 15 [J. Farrell]	**Discussion and demonstration of Java application group project** Tutorial exercises on Jframes, JTextFields, JButtons. Summative graded
11 23 Jan	Advanced inheritance concepts	Ch. 11 [J. Farrell]	Tutorial exercises on advanced inheritance concepts Summative graded
12 30 Jan	Design with classes continued and revision	Ch. 9 [J. Farrell]	**Java application group project due** Project demonstration **Assessment 3: Draft due**
13 06 Feb	Study review week and Final Exam Week		
14 13 Feb	Examinations Continuing students - enrolments for T123 open		Please see exam timetable for exam date, time and location
15 20 Feb	Student Vacation begins New students - enrolments for T123 open		
16 27 Feb	• Results Released • Review of Grade Day for T322 – see Sections 2.6 and 3.2 below for relevant information. • Certification of Grades NOTE: More information about the dates will be provided at a later date through Moodle/KOI email.		
T123 6 Mar 2023			
1 06 Mar	Week 1 of classes for T123		

2.5 Public Holiday Amendments

Please note: KOI is closed on all scheduled NSW Public Holidays.

T322 has two (2) public holidays that occur during this trimester. Classes scheduled for these public holidays (Calendar Class Dates) will be rescheduled as per the table below.

This applies to ALL subjects taught in T322.

Please see the table below and adjust your class timing as required. Please make sure you have arrangements in place to attend the rescheduled classes if applicable to your T322 enrolment.

Classes will be conducted at the same time and in the same location as your normally scheduled class except these classes will be held on the date shown below.

Calendar Class Date	Rescheduled Class Date
Monday 02 January 2023 (Week 8) Thursday 26 January 2023 (Week 11)	Monday 06 Feb 2023 Tuesday 07 Feb 2023

2.6 Review of Grade, Deferred Exams & Supplementary Exams/Assessments

Review of Grade:

There may be instances when you believe that your final grade in a subject does not accurately reflect your performance against the marking criteria. Section 8 of the *Assessment and Assessment Appeals Policy* (www.koi.edu.au) describes the grounds on which you may apply for a Review of Grade.

If you have a concern about your marks and you are unable to resolve it with the Academic staff concerned, then you can apply for a formal Review of Grade as explained in section 3.2(e) Appeals Process below. Please note the time limits for requesting a review. Please ensure you read the Review of Grade information before submitting an application.

Review of Grade Day:

Final exam scripts will not normally be returned to students. Students can obtain feedback on their exam performance and their results for the whole subject at the Review of Grade Day. KOI will hold the Review of Grade Day for all subjects studied in T322. **The ROG Day will be in week 16, the date will be announced at a later date and the students will be notified through Moodle/KOI email.**

Only final exams and whole subject results will be discussed as all other assessments should have been reviewed during the trimester. Further information about Review of Grade Day will be available through Moodle.

If you fail one or more subjects and you wish to consider applying for a Review of Grade you are *STRONGLY ADVISED to* attend the Review of Grade Day. You will have the chance to discuss your final exam and subject result with your lecturer, and will be advised if you have valid reasons for applying for a Review of Grade (see Section 3.2 below and the *Assessment and Assessment Appeals Policy*).

A formal request for a review of grade may not be considered unless you first contact the subject coordinator to discuss the result.

Deferred Exams:

If you wish to apply for a deferred exam because you are unable to attend the scheduled exam, you should submit the Assignment Extension / Exam Deferment Form available by contacting academic@koi.edu.au as soon as possible*, but no later than three (3) working days of the assessment due date.*

If you miss your mid-trimester or final exam there is no guarantee you will be offered a deferred exam.

You must apply within the stated timeframe and satisfy the conditions for approval to be offered a deferred exam (see Section 8.1 of the *Assessment and Assessment Appeals Policy and the Application for Assignment Extension or Deferred Exam Forms*). In assessing your request for a deferred exam, KOI will take into account the information you provide, the severity of the event or circumstance, your performance on other items of assessment in the subject, class attendance and your history of previous applications for special consideration.

Deferred mid-trimester exams will be held before the end of week 9. Deferred final exams will be held on two days during week 1 or 2 in the next trimester. You will not normally be granted a deferred exam on the grounds that you mistook the time, date or place of an examination, or that you have made arrangements to be elsewhere at that time; for example, have booked plane tickets.

If you are offered a deferred exam, but do not attend *you will be awarded 0 marks for the exam*. This may mean it becomes difficult for you to pass the subject. If you apply for a deferred exam within the required time frame and satisfy the conditions you will be advised by email (to your KOI student email address) of the time and date for the deferred exam. Please ensure that you are available to take the exam at this time.

Marks awarded for the deferred exam will be the marks awarded for that item of assessment towards your final mark in the subject.

Supplementary Assessments (Exams and Assessments):

A supplementary assessment may be offered to students to provide a final opportunity to demonstrate successful achievement of the learning outcomes of a subject. *Supplementary assessments are only offered at the discretion of the Board of Examiners.* In considering whether or not to offer a supplementary assessment, KOI will take into account your performance on all the major assessment items in the subject, your attendance, participation and your history of any previous special considerations.

If you are offered a supplementary assessment, you will be advised by email to your *KOI student email address* of the time and due date for the supplementary assessment – supplementary exams will normally be held at the same time as deferred final exams during week 1 or week 2 of the next trimester.

You must pass the supplementary assessment to pass the subject. The maximum grade you can achieve in a subject based on a supplementary assessment is a PASS grade.

If you:
- are offered a supplementary assessment, but fail it;
- are offered a supplementary exam, but do not attend; or
- are offered a supplementary assessment but do not submit by the due date;

you will receive a FAIL grade for the subject.

Students are also eligible for a supplementary assessment for their final subject in a course where they fail the subject but have successfully completed all other subjects in the course. You must have completed all major assessment tasks for the subject and obtained a passing mark on at least one of the major assessment tasks to be eligible for a supplementary assessment.

If you believe you meet the criteria for a supplementary assessment for the final subject in your course, but have not received an offer, complete the *Complaint, Grievance, Appeal Form* and send your form to reception@koi.edu.au. The deadline for applying for supplementary assessment is the Friday of the first week of classes in the next trimester.

2.7 Teaching Methods/Strategies

Briefly described below are the teaching methods/strategies used in this subject:

- *Lectures* (1 hours/week) are conducted in seminar style and address the subject content, provide motivation and context and draw on the students' experience and preparatory reading.
- *Tutorials* (2 hours/week) include class discussion of case studies and research papers, practice sets and problem-solving and syndicate work on group projects. Tutorials often include group exercises and so contribute to the development of teamwork skills and cultural understanding. Tutorial participation is an essential component of the subject and contributes to the development of many of the graduate attributes (see section 2.2 above). Tutorial participation contributes towards the assessment in many subjects (see details in Section 3.1 for this subject). Supplementary tutorial material such as case studies, recommended readings, review questions etc. will be made available each week in Moodle.
- *Online* teaching resources include class materials, readings, model answers to assignments and exercises and discussion boards. All online materials for this subject as provided by KOI will be found in the Moodle page for this subject. Students should access Moodle regularly as material may be updated at any time during the trimester
- *Other contact* - academic staff may also contact students either via Moodle messaging, or via email to the email address provided to KOI on enrolment.

2.8 Student Assessment

Assessment is designed to encourage effective student learning and enable students to develop and demonstrate the skills and knowledge identified in the subject learning outcomes. Assessment tasks during the first half of the study period are usually intended to maximise the developmental function of assessment (formative assessment). These assessment tasks include weekly tutorial exercises (as indicated in the weekly planner) and low stakes graded assessments (as shown in the graded assessment table). The major assessment tasks where students demonstrate their knowledge and skills (summative assessment) generally occur later in the study period. These are the major graded assessment items shown in the graded assessment table.

Final grades are awarded by the Board of Examiners in accordance with KOI's Assessment and Assessment Appeals Policy. The definitions and guidelines for the awarding of final grades are:

- *HD High distinction* (85-100%): an outstanding level of achievement in relation to the assessment process.
- *D Distinction* (75-84%): a high level of achievement in relation to the assessment process.
- *C Credit* (65-74%): a better than satisfactory level of achievement in relation to the assessment process.
- *P Pass* (50-64%): a satisfactory level of achievement in relation to the assessment process.
- *F Fail* (0-49%): an unsatisfactory level of achievement in relation to the assessment process.
- *FW:* This grade will be assigned when a student did not submit any of the compulsory assessment items.

Provided below is a schedule of formal assessment tasks and major examinations for the subject.

Assessment Type	When Assessed	Weighting	Learning Outcomes Assessed
Assessment 1: Tutorial exercises	Weeks 2-11	10%	a, b, c, d
Assessment 2: Mid trimester test	Week 6	15%	a, b
Assessment 3: Java application group project	Draft Week 8 Final Week 12	Group work: 25% Individual contribution: 15% Total: 40%	a, b, c, d
Assessment 4: Final examination On-campus: 2 hours + 10 mins reading time Online: 2 hours + 30 mins technology allowance	Final exam period	35%	a, b, c

Requirements to Pass the Subject:

To gain a pass or better in this subject, students must gain a *minimum of 50%* of the total available subject marks.

2.9 Prescribed and Recommended Readings

Provided below, in formal reference format, is a list of the prescribed and recommended readings.

Prescribed Texts:

Cutajar, J 2018, *Beginning Java Data Structures and Algorithms: Sharpen Your Problem Solving Skills by Learning Core Computer Science Concepts in a Pain-Free Manner*, Packt Publishing, Limited, Birmingham. Available from: ProQuest Ebook Central. [1 June 2020].

Farrell, J 2018, *Java Programming*, 9th ed. Cengage, Mason OH. Available from: ProQuest Ebook Central. [1 June 2020].

Recommended Readings:

Elshawi., 2018. *Big data systems meet machine learning challenges: towards big data science as a service*, Big data research

Suggested Periodicals:

- The Programming Journal: http://programming-journal.org/
- Science of Computer Programming: https://www.journals.elsevier.com/science-of-computer-programming
- International Journal of Programming Languages and Applications: http://airccse.org/journal/ijpla/ ijpla.html

Conference/ Journal Articles:

Students are encouraged to read peer reviewed journal articles and conference papers. Google Scholar provides a simple way to broadly search for scholarly literature. From one place, you can search across many disciplines and sources: articles, theses, books, abstracts and court opinions, from academic publishers, professional societies, online repositories, universities and other web sites.

3. Assessment Details

3.1 Details of Each Assessment Item

The assessments for this subject are described below. The description includes the type of assessment, its purpose, weighting, due date and submission requirements, the topic of the assessment, details of the task and detailed marking criteria, including a marking rubric for essays, reports and presentations. Supplementary assessment information and assistance can be found in Moodle.

KOI expects students to submit their own work in both assignments and exams, or the work of their group in the case of group assignments. Material in assignments which comes from the work of others must be appropriately acknowledged.

Assessment 1

Assessment Type: Weekly tutorial exercises - individual assessment

Purpose: Weekly tutorial exercises are designed to encourage engagement and to develop and reinforce the knowledge and skills presented in the lectures. This assessment contributes to learning outcome c.

Task details: Weekly tutorial exercises from weeks 1-10 submitted on Moodle every week (the week after the tutorial).

Value: 10% (1% per week) Due date: Weeks 1-10

Grading Guide Assessment 1:

Criteria	Unsatisfactory	Satisfactory	Effective	Excellent	Exceptional
Weekly score out of 10	Fail (0 – 49%)	Pass (50 – 64%)	Credit (65 – 74%)	Distinction (75 – 84%)	High Distinction (85 – 100%)

Assessment 2

Assessment type: Mid trimester test – individual assessment

Purpose: This assessment will allow students to demonstrate that they have understood the concepts covered in weeks 1 to 5. This assessment contributes to learning outcomes a and b

Value: 15% Due date: Week 6 tutorial

Task details: The test will consist of questions and problems relating to subject content from weeks 1 – 5 inclusive.

Grading Guide Assessment 2:

Criteria	Unsatisfactory	Satisfactory	Effective	Excellent	Exceptional
Weekly score out of 15	Fail (0 – 49%)	Pass (50 – 64%)	Credit (65 – 74%)	Distinction (75 – 84%)	High Distinction (85 – 100%)

Assessment 3

Assessment type: Java application - group project

Purpose: The purpose of this assignment is to assess your progress towards attainment of a selection of the learning objectives as covered up to week 11. This assessment contributes to learning outcomes a, b, c and d.
On successful completion of this assignment, you should have demonstrated that you can:

- Write a program consisting of multiple objects which interact with each other by following appropriate design practices
- Write a program that provides the requested functionality for the system
- Implement classes which have generalization relationships with other classes
- Utilise polymorphism and abstraction techniques
- Utilise appropriate collection classes from Java's Collections API in appropriate ways/places
- Read data from and write data to text files
- Handle exceptions by constructing try … catch blocks for appropriate circumstances
- Design a text-based user interface

Value: 40% (Group work 25%; Individual contribution 15%)

Due Date: Draft in Week 8 and Final in Week 11

Submission: Submit the completed program, weekly activity log and report on Moodle

Assessment topic: Health Club Membership Management System (HCMM)
In this assignment, you will create a Java software package to process the records in a membership management system according to the given instructions/commands. Java software MUST provide ALL the following functionalities:

Task details:

Read from TWO inputs files: member file and instruction file

When the HCMM system starts up, it assumes that the system has the members' information as given in the membersFile, and it manages the records according to the instructions in the instructionFile.

- membersFile contains a list of members with basic information in a predefined format.
- instructionFile lists instructions/commands to be performed in order on members. The instructions/commands can be: "add", "delete", " query " and "save".

Add valid membership info into the system

- HCMM system must check whether this is an existing member:
  - if there is already a record with the same name and mobile in the system, the existing record should be updated/merged with the new valid input information;
  - otherwise system adds a new member with valid info to the system.

- For instance, the instruction:
  add name James Bloggs; birthday 20/12/1978; pass Gold; mobile 04111111; fee $60
  is supposed to add/update a member with name "James Bloggs", birthday 20/12/1978, membership pass type "Gold", membership fee $60, and the specified mobile information. Note the use of a semicolon (";") to separate the fields.

Delete the member and associated information from the system by name and mobile

- For instance, the instruction:
  delete James Bloggs; 04112541
  indicates deleting the member whose name is James Bloggs and mobile is 04112541 from the system.

Query the statistics using the following instructions and Save the query results to the reportFile.

Query results from different queries should be appended and separated by dash lines.

a) Query the membership records of a given pass type and calculate the total membership fees. For queries with more than one member in query results, sort the results in ascending order of name. When there is more than one member with the same name, sort the results in ascending order of mobile numbers. The format of the query instruction is listed below:

o query pass Silver

b) Query the age-based fee income distribution and save the query results to the reportFile. The format of the instruction is listed below:

o query age fee

the results should be appended to reportFile with format as below:

----query age fee----
Total Club Member size: 50
Age based fee income distribution
(0,8]: $30.00
(8,18]: $120.50
(18,65]: $900.00
(65,-): $50.50
Unknown: $0.00

Save the resulting data collection to output file(s)

- Write the resulting data collection of the instructions of “add”, “delete” and “sort” into the specified resultFile.
- Write the query results into another specified reportFile. When there are more than one “query” commands, append the latest results to the end of the reportFile. Separate the results of different query instructions using dash lines with query instructions.

Submission requirements details: Code and report

Marking Rubric for Group Work: 25%

Criteria	Fail (0 – 49%)	Pass (50 – 64%)	Credit (65 – 74%)	Distinction (75 – 84%)	High Distinction (85 – 100%)
Delivery **3 marks**	Application not submitted or completed very little of the requirements, not submitted in correct format	Completed some of the application requirements, submitted in correct format	Completed many of the application requirement, submitted in correct format	Completed nearly all of the application requirements, submitted in correct format	Completed all of the application requirements, submitted in correct format
Coding standards **3 marks**	No name, date, or assignment title included, poor use of white space (indentation, blank lines), disorganised and messy, poor use of variables (many global variables, ambiguous naming)	Missing information on name, date, or assignment title, white space (indentation, blank lines) used properly, organised work but use of variables is not consistent (many global variables, ambiguous naming)	Includes name, date, and assignment title, white space makes program fairly easy to read, organised work, good use of variables (few global variables, unambiguous naming)	Includes name, date, and assignment title, good use of white space, organized work, good use of variables (unambiguous naming, no global variables)	Includes name, date, and assignment title, excellent use of white space for following the program, creatively organised work, excellent use of variables (unambiguous naming , no global variables)
Introduction (report) **3 marks**	No introduction given or most of the introduction is irrelevant	Introduction of the application is provided with some features and limited cohesion	Introduction of the application is provided with most of the features in cohesive manner	Introduction of the application is provided with all of the features in comprehensive and cohesive manner	Introduction of the application is provided with all features presented systematically in a comprehensive and cohesive manner
Algorithm design (report) **7 marks**	No algorithm is provided or irrelevant/ incomplete algorithm provided which does not encompass application requirements	An algorithm is provided but is not designed effectively, no complexities discussed	An effective algorithm is provided but design can be improved and limited details of the complexity of the algorithm are given	An effective and appropriate algorithm is given with most of the details related to complexity of the algorithm.	An effective and appropriate algorithm is given with all of the details related to complexity of the algorithm, efficiency of the algorithm is compared with some standard options as well
Documentation and comments in code **3 marks**	No documentation and no comments included or irrelevant comments are added	Basic documentation and few comments are provided	Basic documentation and comments are provided including descriptions of variables, purpose is noted for each function	Clearly documented and commented code including descriptions of all variables, specific purpose is noted for each function and each control structure	Clearly and effectively documented and commented code including descriptions of all variables, specific purpose is noted for each function, control structure, input requirements, and output results

Criteria	Fail (0 – 49%)	Pass (50 – 64%)	Credit (65 – 74%)	Distinction (75 – 84%)	High Distinction (85 – 100%)
Runtime **3 marks**	Does not execute due to errors. User prompts are misleading or non-existent. No testing has been completed.	Executes with some warning errors, no testing has been completed, and no output from test cases is included.	Executes without errors, user prompts contain little information and poor design, some testing has been completed and partial output from test cases is included	Executes without errors, user prompts are understandable, with minimum use of symbols or spacing in output, most of the testing has been completed and most of the output from test cases is included	Executes without errors, excellent user prompts, good use of symbols, and spacing in output, thorough and organized testing has been completed and complete output from test cases is included
Response to feedback **3 marks**	Feedback is not considered at all	Some of the feedback responded to, requires more details and justification	Most of the feedback responded to, requires more details and justification	All of the feedback responded, could include more details and justification	All of the feedback responded to with comprehensive details and justification
Total mark out of 25					

Marking Rubric for Individual Contribution: 15%

Criteria	Fail (0 – 49%)	Pass (50 – 64%)	Credit (65 – 74%)	Distinction (75 – 84%)	High Distinction (85 – 100%)
Attendance at weekly meetings **3 marks**	Attended less than 50% of the meetings	Attended less than 65% of the meetings	Attended less than 75% of the meetings	Attended less than 85% of the meetings	Attended 85% or more of the meetings
Weekly activity log **3 marks**	Provided less than 50% of the weekly logs and/or provided scant details	Provided less than 65% of the weekly logs and/or provided incomplete details	Provided less than 75% of the weekly logs and/or provided only basic details	Provided less than 75% of the weekly logs and/or provided most required details	Provided less than 75% of the weekly logs and/or provided comprehensive details
Time management **3 marks**	Assigned tasks typically late or not completed	Most assigned tasks completed by the deadline	All assigned tasks completed by the deadline	Most assigned tasks completed well in advance of deadline allowing time for revision and refinement	All assigned tasks completed well in advance of deadline allowing time for revision and refinement
Tasks **3 marks**	Did not complete the tasks assigned	Completed most assigned tasks but not thorough and lacking details	Completed most assigned tasks in detail	Completed all assigned tasks in detail	Completed all tasks assigned at a professional level

Criteria	Fail (0 – 49%)	Pass (50 – 64%)	Credit (65 – 74%)	Distinction (75 – 84%)	High Distinction (85 – 100%)
Actual contribution to group project **3 marks**	Made little or no contribution to the project/report	Made a cursory contribution to the project/report	Made a fair contribution to the project/report	Made a significant contribution to the project/report	Made a vital contribution to the project/report
Total mark out of 15					

Assessment 4

Assessment Type: Final exam – exam - individual assessment.

Duration: On-campus: 2 hours + 10 mins reading time. Online: 2 hours + 30 mins technology allowance

Purpose: The purpose of the final examination is to test students' understanding of the subject's concepts and their ability to apply these concepts. This assessment contributes specifically to learning outcomes a, b and c.

Value: 35%

Due Date: The final exam will be held in the official KOI exam period of the trimester. The specific date and time will be posted towards the end of the trimester.

Topic: The examination may cover content from any part of the subject.

Task Details: The exam will consist of short answer, extended answer and scenario based questions derived from topics covered in the lectures and tutorials during the trimester.

3.2 General information about assessment

a) Late Penalties and Extensions

An important part of business life and key to achieving KOI's graduate outcome of Professional Skills is the ability to manage workloads and meet deadlines. Completing assessment tasks on time is a good way to master these habits.

Students who miss mid-trimester tests and final exams without a valid and accepted reason may not be granted a deferred exam and will be awarded 0 marks for the assessment item. Assessment items which are missed or submitted after the due date/time will attract a penalty unless there is a compelling reason (see below). These penalties are designed to encourage students to develop good time management practices, and to create equity for all students.

Any penalties applied will only be up to the maximum marks available for the specific piece of assessment attracting the penalty.

Late penalties, granting of extensions and deferred exams are based on the following:

In Class Tests and Quizzes (excluding Mid-Trimester Tests)

- Generally, extensions are not permitted. A make-up test may only be permitted under very special circumstances where acceptable supporting evidence of illness, hardship or unavoidable problems preventing completion of the assessment is provided (see section (b) below). The procedures and timing to apply for a make-up test (only if available) are as shown in the section *Applying for an Extension* (see below).
- Missing a class test will result in 0 marks for that assessment item unless the above applies.

Written Assessments and Video Assessments

- There is a late penalty of *5% of the total available marks* per calendar day unless an extension is approved (see *Applying for an Extension section* below).

Presentations

- Generally, extensions are not permitted. Missing a presentation will result in 0 marks for that assessment item. The rules for make-up presentations are the same as for missing in-class tests (described above).
  For group presentations, if serious circumstances prevent some members of the group from participating, the members of the group who are present should make their contributions as agreed. If a make-up presentation is approved, the other members of the group will be able to make their individual presentation later and will be marked according to the marking rubric. A video presentation may be used to facilitate the process.

Mid-Trimester Tests and Final Exams

If students are unable to attend mid-trimester tests or final exams due to illness, hardship or some other unavoidable problem (acceptable to KOI), they must:

- Complete the Assignment Extension / Exam Deferment Form available by contacting academic@koi.edu.au as soon as possible*, but no later than three (3) working days after the exam date.*
- Provide acceptable documentary evidence (see section (b) below).
- Agree to attend the deferred exam as set by KOI if a deferred exam is approved.

Deferred exam

- There will only be one deferred exam offered.
- Marks obtained for the deferred exam will be the marks awarded for that assessment item.
- If you miss the deferred exam you will be awarded 0 marks for the assessment item. This may mean you are unable to pass the subject.

b) Applying for an Extension

If students are unable to submit or attend an assessment when due, they must

- Complete the Assignment Extension / Exam Deferment Form available by contacting academic@koi.edu.au as soon as possible*, but no later than three (3) working days of the assessment due date.*
- Provide acceptable documentary evidence in the form of a medical certificate, police report or some other appropriate evidence of illness or hardship, or a technician's report on problems with computer or communications technology, or a signed and witnessed statutory declaration explaining the circumstances.

- Students and lecturers / tutors will be advised of the outcome of the extension request as soon as practicable.

Please remember there is no guarantee of an extension being granted, and poor organisation is not a satisfactory reason to be granted an extension.

c) Referencing and Plagiarism

Please remember that all sources used in assessment tasks must be suitably referenced.
Failure to acknowledge sources is plagiarism, and as such is a very serious academic issue. Students plagiarising run the risk of severe penalties ranging from a reduction in marks through to 0 marks for a first offence for a single assessment task, to exclusion from KOI in the most serious repeat cases. Exclusion has serious visa implications. The easiest way to avoid plagiarising is to reference all sources.

Harvard referencing is the required method – in-text referencing using Author's Surname (family name) and year of publication. A Referencing Guide, "Harvard Referencing", and a Referencing Tutorial can be found on the right-hand menu strip in Moodle on all subject pages.

An effective way to reference correctly is to use *Microsoft Word's* referencing function (please note that other versions and programs are likely to be different). To use the referencing function, click on the References Tab in the menu ribbon – students should choose *Harvard.*

Authorship is also an issue under plagiarism – KOI expects students to submit their own original work in both assessment and exams, or the original work of their group in the case of a group project. All students agree to a statement of authorship when submitting assessments online via Moodle, stating that the work submitted is their own original work.

The following are examples of academic misconduct and can attract severe penalties:

- Handing in work created by someone else (without acknowledgement), whether copied from another student, written by someone else, or from any published or electronic source, is fraud, and falls under the general Plagiarism guidelines.
- Copying / cheating in tests and exams is academic misconduct. Such incidents will be treated just as seriously as other forms of plagiarism.
- Students who willingly allow another student to copy their work in any assessment may be considered to assisting in copying/cheating, and similar penalties may be applied.

Where a subject coordinator considers that a student might have engaged in academic misconduct, KOI may require the student to undertake an additional oral exam as a part of the assessment for the subject, as a way of testing the student's understanding of their work.

Further information can be found on the KOI website.

d) Reasonable Adjustment

The Commonwealth Disability Discrimination Act (1992) makes it unlawful to treat people with a disability less fairly than people without a disability. In the context of this subject, the principle of Reasonable Adjustment is applied to ensure that participants with a disability have equitable access to all aspects of the learning for the subject. For assessment, this means that barriers to their demonstrating competence are removed wherever it is reasonably practical to do so.

Examples of reasonable adjustment in assessment may include:
- provision of an oral assessment, rather than a written assessment
- provision of extra time
- use of adaptive technology.

The focus of the adjusted assessment should be on enabling the student to demonstrate achievement of the learning outcomes for the subject, rather than on the method of assessment.

e) Appeals Process

Full details of the KOI *Assessment and Assessment Appeals Policy* may be obtained in hard copy from the Library, and on the KOI website www.koi.edu.au under *Policies and Forms*.

Assessments and Mid-Trimester Exams:

Where students are not satisfied with the results of an assessment, including mid-trimester exams, they have the right to appeal. The process is as follows:

- Discuss the assessment with their tutor or lecturer – students should identify where they feel more marks should have been awarded – students should provide valid reasons based on the marking guide provided for the assessment. Reasons such as *"I worked really hard*" are not considered valid.
- If still not satisfied, students should complete an Application for Review of Assessment Marks form, clearly explaining the reasons for seeking a review. This form is available from the KOI website under *Policies and Forms* and is also available at KOI Reception (Kent St, Market St and O'Connell St). The completed Application for Review of Assessment Marks form should be submitted as explained on the form with supporting evidence attached to academic@koi.edu.au .
- The form must be submitted within *ten (10) working days* of the return of the marked assessment, or within *five (5) working days* after the return of the assessment if the assessment is returned after the end of the trimester.

Review of Grade – whole of subject and final exams:

Where students are not satisfied with the results of the whole subject or with their final exam results, they have the right to request a Review of Grade – see the *Assessment and Assessment Appeals Policy* for more information.

An *Application for Review of Grade/Assessment Form* (available from the KOI Website under *Policies and Forms* and from KOI Reception at Kent St, Market St and O'Connell St) should be completed clearly explaining the grounds for the application. The completed application should be submitted as explained on the form, with supporting evidence attached to academic@koi.edu.au