



UNIVERSITY
OF TASMANIA

塔 斯 马 尼 亚 大 学

School of Information Systems
商 学 院 信 息 系 统 学 院

BSA104
Business Programming
Unit Outline
课程大纲

Transnational Education Program

(Shanghai Fisheries University, China)

(中国 上海水产大学)

Semester 2, 2007

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Unit Details

School:	Information Systems
Faculty:	Business
Unit Title:	Business Programming
Unit Code:	BSA104
Prerequisites:	None
Campus & Mode:	IEN Institute, Nanhui Campus, Shanghai Fisheries University: Flexible, Internal
Unit Weight:	12.5%
Teaching Staff:	Shirley Wang
Consultation Hours:	To Be Advised

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1. Unit Description

This unit is an introduction to a modern programming language, Java; the development of program specifications in English, and the implementation of these computer programs; the elements of disciplined programming using well-structured algorithms; program documentation; the design of data structures: simple variables, arrays and objects. The program exercises used will be oriented towards business applications.

2. Aim

This unit seeks to develop knowledge and skills in:

- a) The development of programs in a modern programming language
- b) The use of data structures to model information
- c) Documentation of computer programs
- d) Analysis and design of simple algorithms

3. Learning Outcomes

On completion of this unit, a student should be able to:

- 1) Develop simple computer programs in Java, including the use of common object classes;
- 2) Be able to interpret and modify a range of small to medium existing Java programs in order to alter their function or behaviour;
- 3) Be able to develop algorithms using a methodological approach;
- 4) Be aware of the style, purpose and importance of documentation associated with software development; and
- 5) Be aware of a range of business applications that can be developed using the Java programming language.

3.1 Evidence of Achieving Learning Outcomes

Upon successful completion of this unit a student should have attained:

- a) An understanding of the nature and use of Java programming language and common object classes, and the ability to develop 'simple' computer programs in Java;

Assessment Criteria:

HD level: Demonstrate a clear understanding of the nature of Java classes, of Java class methods, of private data variables, and of the use of the main method.

- DN level: Demonstrate a good understanding of the nature of Java classes, of Java class methods, of private data variables, and of the use of the main method.
- CR level: Demonstrate a reasonable understanding of the nature of Java classes, of Java class methods, of private data variables, and of the use of the main method.
- PP level: Demonstrate a basic understanding of the nature of Java classes, of Java class methods, of private data variables, and of the use of the main method.
- NN level: Fail to demonstrate adequate understanding of the nature of Java classes, of Java class methods, of private data variables, and of the use of the main method.

- b) An ability to interpret the clients requirements, and then develop a business application using a methodological approach to write the Java program;

Assessment Criteria:

- HD level: Provide a working set of Java classes that satisfy all the stated requirements and demonstrate a clear ability to design and implement a non-trivial Java class.
- DN level: Provide a working set of Java classes that all satisfy the stated requirements and demonstrate a good ability to design and implement a non-trivial Java class.
- CR level: Provide a working set of Java classes that satisfy all the stated requirements and demonstrate an ability to design and implement a non-trivial Java class.
- PP level: Provide a working set of Java classes that satisfy most the stated requirements and demonstrate a basic ability to design and implement a non-trivial Java class.
- NN level: Provide a set of Java classes that fail to satisfy the stated requirements and fail to demonstrate a basic ability to design and implement a non-trivial Java class.

- c) An understanding of procedures for testing written and modified Java program code to ensure the program's correctness of operation and compliance to the client's requirements;

Assessment Criteria:

- HD level: Provide evidence of thorough testing of the revised and written classes, including the handling of 'unexpected' data input and correct logic.
- DN level: Provide evidence of thorough testing of all the revised and written classes to handle the expected data input and correct logic.
- CR level: Provide evidence of some testing of all the revised and written classes to handle the expected data input and correct logic.
- PP level: Provide evidence of some, but limited testing of the revised and written classes to handle the expected data input and correct logic.

NN level: Provide little or no evidence of testing the revised and written classes.

d) An ability to appropriately document the written and modified Java program code;

Assessment Criteria:

HD level: Provide complete documentation of all the relevant aspects of the revised and written classes.

DN level: Provide reasonably complete documentation all the relevant aspects of the revised and written classes.

CR level: Provide basic documentation on all the relevant aspects of the revised and written classes.

PP level: Provide some documentation on the relevant aspects of the revised and written classes.

NN level: Provide unsatisfactory or no documentation on relevant aspects of the revised and written classes.

4. Generic Graduate Attributes

Attribute	Descriptor	Unit Specifics
Knowledge	Graduates will have an in-depth knowledge in their chosen field of study and the ability to apply that knowledge in practice. They will be prepared for life-long learning in pursuit of personal and professional development.	<ul style="list-style-type: none"> • Develop an introductory knowledge of computer programming, using Java; • Understand the process of development, and nature of, common algorithms; • Be capable of applying this knowledge to the development of simple computer programs.
Communication Skills	Graduates will be able to communicate effectively across a range of contexts.	<ul style="list-style-type: none"> • Be aware of the importance of adequate client consultation when developing the requirements for computer software; • Understand the nature and importance of documentation to support the interpretation and maintenance of computer software; • Demonstrate a high level of report writing and oral communication; • Discuss relevant problems with others, present their own opinions and critically assess the opinions of others.
Problem-solving Skills	Graduates will be effective problem-solvers, capable of applying logical, critical and creative thinking in a range of problems. They will have developed competencies in information literacy.	<ul style="list-style-type: none"> • Conceptualise basic problems and be able to formulate a range of potential algorithmic and packaged software solutions; • Be capable of applying a well defined programming methodology to the solution of basic problems, through algorithmic specification into working Java programs;

		<ul style="list-style-type: none"> Understand the importance of the production of correct software that has been rigorously tested and verified correct against its requirement specifications.
Global Perspective	Graduates will be able to demonstrate a global perspective and inter-cultural competence in their professional lives.	<ul style="list-style-type: none"> Appreciate some of the issues of working with clients of different cultures in order to develop correct software systems; Understand the key issues faced by software developers from any culture in the development of correct software.
Social Responsibility	Graduates will act ethically, with integrity and social responsibility.	<ul style="list-style-type: none"> The social and ethical standards of the profession will be reinforced; Understand the importance of the production of correctly verified software in the processing of information and integration into critical systems.

5. Prior Knowledge and / or Skills

5.1 Assumed Skills

It is assumed that students studying this unit have sufficient mathematical and logical skills and knowledge to understand the logic of computer programming, and to be able to design, implement and verify basic computer programs.

6. Texts, References and Learning Resources

6.1 Prescribed Text

Lewis J & Loftus W (2005) *Java Software Solutions: Foundations of Program Design*, 4th Ed, Pearson Education.

6.2 Software Requirements

The textbook is supplied with a CD ROM that contains the required Java software.

The current version of the Java SE Development Kit (JDK), which includes the Java Runtime Environment (JRE) and command-line development tools, is available free of charge from: <http://java.sun.com/javase/downloads/index.jsp>

The current version of jGRASP, is available free of charge from: www.jgrasp.org

Access to this software, installed on a Windows system, will be required for each student studying the course.

6.3 Access to Information Technology

Students are required to have access to a PC running Windows 2000 or later version, and to have at least three hours per week per student guaranteed access time to these PCs, in addition to the time formally scheduled in tutorials.

Students are expected to have access to the WebCT Vista system operated by the University of Tasmania and containing the course material for this unit. It is assumed that students are able to submit their assignments via this WebCT Vista system.

7. Teaching Arrangements

7.1 Lectures

As advised by the IEN Institute for SFU

7.2 Tutorials

As advised by the IEN Institute for SFU

7.3 Practical / Laboratory Sessions

Students are expected to spend an **average of three hours per week outside of the formally scheduled hours working on the development of Java software**. Some of this time may need to be spent using PCs in a laboratory.

8. Unit Schedule

Module	Lecture	Textbook Reading (Lewis and Loftus)	Tutorials (Lewis and Loftus)
1	1. Introduction to Java Language 2. Java Language	Chapter 1	No tutorial
2	3. Data & Expressions - 1 4. Data & Expressions - 2	Chapter 2	Exercises 1.1 - 1.9, 1.16 - 1.18, 1.20
3	5. Data & Expressions - 3 6. Using Classes & Objects - 1	Chapters 2 & 3	Project 1.4 Exercises 2.4 - 2.6
4	7. Using Classes & Objects - 2 8. Writing Classes - 1	Chapters 3 & 4	Exercises 2.7, 3.1 - 3.4 Project 2.6
5	9. Writing Classes - 2 10. Conditionals & Loops - 1	Chapters 4 & 5	Exercises 3.5 - 3.7 Projects 3.4
6	11. Conditionals & Loops - 2 12. Conditionals & Loops - 3	Chapter 5	Exercises 4.1 Projects 4.1 - 4.2
7	13. Revision 14. Object-Oriented Design - 1	Chapter 6	Exercises 5.2 - 5.4 Projects 5.1 - 5.2
8	15. Object-Oriented Design - 2 16. Object-Oriented Design - 3	Chapter 6	Exercises 6.1 - 6.3 Projects 6.2
9	17. Arrays - 1 18. Arrays - 2	Chapter 7	Exercises 6.4 - 6.5 Projects 6.3
10	19. Inheritance - 1 20. Inheritance - 2	Chapter 8	Exercises 7.1, 7.4 - 7.5 Projects 7.1 - 7.2
11	21. Polymorphism 22. Exceptions	Chapters 9 & 10	Exercises 8.3 Project 8.1 - 8.2
12	23. Recursion 24. Collections	Chapters 11 & 12	Exercises 9.1 Project 9.1, 10.1
13	Revision		Consideration of sample examination.

9. Learning Expectations and Strategies

9.1 Expectations

The University is committed to high standards of professional conduct in all activities, and holds its commitment and responsibilities to its students as being of paramount importance. Likewise, it holds expectations about the responsibilities students have as they pursue their studies within the special environment the University offers.

The University's Code of Conduct for Teaching and Learning states:

Students are expected to participate actively and positively in the teaching/learning environment. They must attend classes when and as required, strive to maintain steady progress within the subject or unit framework, comply with workload expectations, and submit required work on time.

In order to pass this unit, the School of Information Systems expects that students:

- Achieve a total of at least 45% in continuing assessment of the unit; and
- Achieve a total of at least 45% in the examination component of the unit; and
- Achieve a total mark of at least 50% in the total assessment of the unit.

In exceptional circumstances the above expectations may be relaxed by the School Meeting of Assessors.

It is expected that students will familiarise themselves with access and use of the WebCT Vista system operated by the University for the electronic delivery of course materials, and for various forms of communication.

It is expected that students will regularly consult email sent to their University email address and the University WebCT Vista system for notices relating to the administration of the unit, and for notification of the results of assignments.

It is expected that students will submit assignments for the unit by the specified dates and times, unless prior approval has been granted via an assignment extension form, at least 24 hours before the assignment is due to be submitted.

It is expected that students will read the background material specified in the course curriculum, will actively attend and participate in tutorials, and be prepared to discuss relevant issues arising with tutors, lecturers and fellow students.

These expectations are in addition to those specified in relevant University regulations.

9.2 Students' Expectations of the Unit

Students enrolled in BSA104 may reasonably expect the following:

- To have all course material available electronically via the WebCT Vista system
- To be able to contact a lecturer or tutor, with notice, to discuss issues arising in the unit, either relating to content or their performance within the unit
- That assignments will be marked both qualitatively, in terms of grades and comments, and also quantitatively in terms of a final mark and associated grade for each assignment
- That all relevant notices regarding the administration of the unit, including any necessary changes, will be communicated to all students enrolled in the unit via WebCT Vista, or if appropriate, via email.

These expectations are in addition to those specified in relevant University regulations.

10. Assessment

10.1 Assessment Summary

Component	Weight/Value	Due date
Assignment 1	10%	Thursday, 5 th April, 2007
Assignment 2	20%	Thursday, 10 th May, 2007
Assignment 3	30%	Thursday, 7 th June, 2007
Final exam	40%	To Be Advised

Note: Assignments 1 and 2 are individual assignments. Assignment 3 is a group assignment. Further details will be provided with the assignment specifications sheets.

10.2 Final Exam

The final examination is an open book, two hour exam that covers all of the learning outcomes given above.

10.3 How your Final Result is Determined

The final result is derived by the weighted sum of the individual results for assignments 1, 2, and 3, and the examination.

In order to pass this unit, the School of Information Systems expects that students:

- Achieve a total of at least 45% in continuing assessment of the unit; and
- Achieve a total of at least 45% in the examination component of the unit; and
- Achieve a total mark of at least 50% in the total assessment of the unit.

Note: In exceptional circumstances, the School reserves the right to adjust the above assessment rule.

10.4 Submission of Assignments

Every assessment task has a due date. Students must submit assignments for the unit by the specified dates, unless prior approval has been granted via an assignment extension form, at least 24 hours before the assignment is due to be submitted.

All assignments should be submitted through WebCT Vista. No other form of submission is acceptable. No eMail or hard copy submissions are acceptable.

Note: Students must take responsibility for the correct submission of their assignments. Students are expected to adhere to the following procedure for submission:

- Once submitted to WebCT Vista, submitted files **MUST** be checked by the student to ensure that correct submission of the file has been undertaken.
- Students are expected to notify the Lecturer **WITHIN 12 HOURS** of submission if their files have not been submitted correctly.

Students must take responsibility for safely backing up of their own files during the academic year to ensure that no files are permanently lost.

10.5 Requests for Extensions

Extensions will be given **only** under the following conditions:

- Employment related issues: Arrangements for an extension must be made with the lecturer prior to the assignment due date.
- Illness: A medical certificate must be presented to the lecturer either prior to the due date or as soon as possible after the due date.

The lecturer of the unit will address any extraordinary extension falling outside of these criteria.

All extensions must be applied for on the appropriate form, which is available at: www.infosys.utas.edu.au/students/forms/asst_extension.pdf. This form must be completed and submitted to the unit co-ordinator through the School Office. Verbal or eMail requests for extensions will not be accepted. If approved, the extension request form will be returned with the lecturer's signature, and this signed copy should be retained by the student as documentary evidence that an extension was granted.

Students should not assume that all extension applications will be granted. Students must have received confirmation of the extension by the Lecturer in order for an extension to be granted.

Any extension granted will have a new submission due date and time.

Assignments that are not submitted by the due date and time will incur the following penalties:

10.6 Penalties 惩罚

10% (of mark achieved) per day or part thereof (excluding extensions) for late submissions.

10.7 Review of Assessment and Appeals

It is expected that students will adhere to the following policy for review of any piece of continuous assessment.

- Within 5 days of the release of the assessment result, the student should request an appointment with the Lecturer/Coordinator. **The student should be prepared to discuss specifically which section of the marking criteria they are disputing and why they consider the mark is inappropriate.**
- Following this discussion, students may request a formal remark of the original submission (in accordance with Rule of Academic Assessment 2, clause 22.1). This remark will be undertaken, where practicable, by an alternative assessor.

Under Rule of Academic Assessment 2, clause 23, students may also request a review of the final result in a unit. The request and payment must be made within 10 days from the date of the result notification. Students are referred to:

<http://acserv.admin.utas.edu.au/rules/Rule2.doc>
www.admin.utas.edu.au/ac_serv/flowchart_review_assesment.pdf

10.8 Assessment Details

Assessment Task 1	
Task description	Develop additional functionality for an existing Java language application by revising and writing classes to extend the base Java language code provided.
Task length	Not applicable to this assessment
Links to unit's learning outcomes	Learning Outcome: 1, 3, 4
Assessment criteria / guidelines	<ul style="list-style-type: none"> • Java classes that satisfy the stated requirements • Completeness of the documentation on all the relevant aspects of the revised and written classes • Evidence of thorough testing of the revised and written classes • The demonstrated understanding of the nature of Java language classes, of Java class methods, of private data variables, and of the use of the main method
Due Date	Thursday, 5 th April, 2007

Assessment Task 2	
Task description	Develop a Java language application by writing classes to provided the required functionality
Task length	Not applicable to this assessment
Links to unit's learning outcomes	Learning Outcome: 2, 3, 4
Assessment criteria / guidelines	<ul style="list-style-type: none"> • Set of Java classes that satisfy the stated requirements • Completeness of the documentation on all the relevant aspects of the revised and written classes • Evidence of thorough testing of the revised and written classes • The demonstrated understanding of the nature of Java language classes, of Java class methods, of private data variables, and of the use of the main method • The demonstrated ability to design and implement non-trivial Java classes
Due Date	Thursday, 10 th May, 2007

Assessment Task 3	
Task description	Develop a Java language application by writing several classes to provided the required functionality, working within a small software development team
Task length	Not applicable to this assessment
Links to unit's learning outcomes	Learning Outcome: 2, 3, 4, 5
Assessment criteria / guidelines	<ul style="list-style-type: none"> • Set of Java classes that satisfy the stated requirements • Completeness of the documentation on all the relevant aspects of the revised and written classes • Evidence of thorough testing of the revised and written classes • The demonstrated understanding of the nature of Java language classes, of Java class methods, of private data variables, and of the use of the main method • The demonstrated ability to design and implement non-trivial Java classes
Due Date	Thursday, 7 th June, 2007

Assessment Task 4	
Task description	Final Examination: This is an open book examination that covers all the lecture and tutorial material delivered in the unit, as well as the textbook and additional notes provided via Vista
Task length	Two hours
Date	As advised by the University of Tasmania

11. Academic Referencing

In your written work you will need to support your ideas by referring to scholarly literature, works of art and/or inventions. It is important that you understand how to correctly refer to the work of others and maintain academic integrity.

Failure to appropriately acknowledge the ideas of others constitutes academic dishonesty (plagiarism), a matter considered by the University of Tasmania as a serious offence.

The appropriate referencing style for the School of Information Systems is Harvard Referencing. Students are expected to adhere to the School of Information System's preferred method of Referencing and Citation, as outlined in:

www.utas.edu.au/library/assist/gpoa/gpoa2.html

For information on presentation of assignments, including referencing styles:

www.utas.edu.au/library/assist/gpoa/gpoa.html

12. Plagiarism 抄袭 (剽窃)

While students are encouraged to discuss the assignments in this unit and to engage in active learning from each other, it is important that they are also aware of the University's policy on plagiarism. Plagiarism is taking and using someone else's thoughts, writings or inventions and representing them as your own; for example downloading an essay wholly or in part from the internet, copying another student's work or using an author's words or ideas without citing the source.

Plagiarism is a form of cheating. It is taking and using someone else's thoughts, writings or inventions and representing them as your own; for example, using an author's words without putting them in quotation marks and citing the source, using an author's ideas without proper acknowledgment and citation or copying another student's work.

If you have any doubts about how to refer to the work of others in your assignments, please consult your lecturer or tutor for relevant referencing guidelines, and the academic integrity resources on the web at:

www.utas.edu.au/tl/supporting/academicintegrity/index.html.

The intentional copying of someone else's work as one's own is a serious offence punishable by penalties that may range from a fine or deduction/cancellation of marks and, in the most serious of cases, to exclusion from a unit, a course or the University. Details of penalties that can be imposed are available in the Ordinance of Student Discipline – Part 3 Academic Misconduct, see: www.utas.edu.au/universitycouncil/legislation/

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The University reserves the right to submit assignments to plagiarism detection software, and might then retain a copy of the assignment on its database for the purpose of future plagiarism checking.

抄袭是一种欺骗行为。任何把别人的思想，作品和发明擅自占为己有的行为均被视为抄袭。比如，引用有关权威的词句而对未其出处进行必要的说明，或者引用有关作者思想未作必要的注释，或者拷贝其他学生的作业。

刻意抄袭别人的作品为己用，是一种严重的错误，也是一种学术欺诈。学校将视情节给予罚款，降低或取消成绩，或者严重者将取消学籍。**有任何疑问请与有关人员联系。**

It is important that you understand this statement on plagiarism. Should you require clarification please see your unit coordinator or lecturer. Useful resources on academic integrity, including what it is and how to maintain it, are also available at:

www.utas.edu.au/tl/supporting/academicintegrity/students.html

13. Additional Assistance

There is a range of University-wide support services available to you including Student Services, International Services and Learning Development. Please refer to the Current Students homepage at: www.utas.edu.au/students/

13.1 Help Resolving Concerns about this Unit

It is expected that students will adhere to the following policy for making any complaint or grievance directly related to a Unit:

- a) In the first instance, students are to approach the Lecturer or Unit Coordinator concerned and arrange a time to speak with them about their concern.
- b) If an issue remains unresolved, the student should approach the Head of School and arrange a time to speak with them about their concern.

If the School's internal policy of complaints is unable to resolve an issue, students should consult Ordinance 8: Student Complaints, for further direction.

14. Unit Feedback

The University of Tasmania, on a regular basis, evaluates its teaching and learning environment through the Student Evaluation of Teaching and Learning (SETL) system. The University values feedback from students and from time to time you will be asked to complete a SETL evaluation for a unit of study. For more information on SETL go to:

www.utas.edu.au/tl/haveyoursay.html