Mainframe Systems 1 G – 7860

Unit Outline 2009
Semester 1 2009

Faculty of Information Sciences and Engineering

University of Canberra

Australian Government Higher Education (CRICOS)
Registered Provider number: #00212K

This Unit Outline must be read in conjunction with:

a) *Studying at the University of Canberra: A Guide to Policies and Procedures*, which sets out University-wide policies and procedures, including information on matters such as plagiarism, grade descriptors, moderation, feedback and deferred exams, and is available at http://www.canberra.edu.au/student-services

b) *Guide to Student Services at the University of Canberra*, and is available at http://www.canberra.edu.au/student-services

c) Any additional information specified in section 6f.

1: General Information

1a Unit title
Mainframe Systems 1 G

1b Unit number
7860

1c Semester and year offered
Semester 1 2009

1d Credit point value
3

1e Unit level
Graduate

1f Name of Unit Convener and contact details (including telephone and email)
Convener:

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Lecturer

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1g **Name of Unit Moderator and contact details (including telephone and email**
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1h **Administrative contact details (including name, location, telephone and email)**
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2: Academic Content

2a **Unit description and learning outcomes**
To provide foundation knowledge, understanding and practical skills in relation to:

- mainframe systems, their history and the characteristics that distinguish them from PCs and other computer systems;
- working as a systems developer in a modern mainframe environment, including a basic, working familiarity with key aspects of the environment, such as z/OS, ISPF and JCL;
- the principles and practices of transaction processing and control in a mainframe environment;

and an awareness of the elements that collectively comprise a modern, mainframe IT environment.

This unit is at the graduate (G) level. The tasks for this unit are above the entry level. Some topics presented will be presented and tested in greater depth than the equivalent undergraduate unit.

Conceptual Development:

- Understanding of core mainframe technologies and their use
- Understanding of the importance of mainframes in modern corporate commercial IT environments
- Understanding of the data storage structure in mainframe systems
- Be able to define the technologies used in mainframes such as Sysplex and batch job execution
- Understand batching of jobs and the way JES works

Practical Outcomes:

- Be able to use common tools to connect to a mainframe system

- Be able to identify and work with the common software installed on z/OS and its purpose (e.g. CICS, DB2, WebSphere and language compilers)
- Conduct simple tasks using commonly installed software on z/OS
- Use ISPF to manipulate datasets
- Develop and execute simple batch jobs

2b Prerequisites and/or co-requisites

Assumed knowledge: Some experience in the general use of computers.

3: Delivery of Unit and Timetable

3a Delivery mode

This unit will be delivered on campus with weekly lectures/tutorials and laboratory sessions, as per the timetable for this semester.

3b Schedule of topics/lectures/tutorials/practicals/field classes by day

Lecures are held in 11B24 at 18:30 each Monday. Laboratories are held in 11B37 at16:30 on Monday. Monday is a public holiday in week 3 and week 10, and Friday is used as below.

Week	Lecture	Laboratory
1 (23/2)	**Data Sets** **Compiling Programs under z/OS**	**Using ISPF to Work with JCL and Datasets**
2 (2/3)	**Introduction to Mainframes and Mainframe Operating Systems**	**Compiling and Testing Programs Using JCL**
3 (13/3) (FRIDAY)	**Submitting and Controlling Jobs** **(Lecture is Friday 17:30)**	**Basics of Job Control Language** **(Lab is Friday 15:30)**
4 (16/3)	**Batch Processing and JES**	**Sorting/Merging Files Using Utility**
5 (23/3)	**Allocating DASD Datasets & Managing Sysout Datasets**	**Using JCL and JES to Manage Batch Processing**
6 (30/3)	**z/OS and System Managed Storage Overview**	**Allocating DASD Datasets & Managing Sysout Datasets**
7 (6/4)	**Developing Applications on z/OS** **General Conditional Programming**	**VSAM concepts and Terms**
8 (13/4)	*class free period*	*class free period*
9 (20/4)	*class free period*	*class free period*
10 (1/5) (FRIDAY)	**Servers on z/OS** **(Lecture is Friday 17:30)**	**Free Form Laboratory** **(Lab is Friday 15:30)**
11 (4/5)	**Messaging and Queuing**	**JCL Procedures** **Conditional Statements in JCL**
12 (11/5)	**Transaction Management Systems** **ReXX execs**	**Free Form Laboratory**
13 (18/5)	**Database Use and Management on z/OS**	**Program Execution Facilities with JCL** **Tso ReXX procedures**
14 (25/5)	**Mainframe Hardware Systems, Clustering and Sysplex**	**JCL and VSAM Datasets**
15 (1/6)	**Overview of System Programming**	**z/OS Tools, Review Exercises**

4: Unit Resources

4a Lists of required texts/readings

Introduction to the New Mainframe: z/OS Basics, ISBN: 073849660X, IBM, PDF, August 2007.

Murach's OS/390 and z/OS JCL, Raul Menendez and Doug Lowe, ISBN 1-890774-14-6, Mike Murach & Associates, Inc., Fresno, CA, 2002.

4b Materials and equipment

IBM Mainframe access, provided by Global Online Learning Pty Ltd

Vista tn3270 terminal emulator

5: Assessment

5a Assessment overview

Assessment Item (including exams held in the exam period)	Due Date of Assignments	Weighting (total to equal 100%)
Test 1 covering weeks 1 – 4	Week 5	10
Assignment 1 (Basic JCL and Datasets)	Week 5	5
Assignment 2 (Sorting, Compiling)	Week 7	10
Test 2 covering weeks 5 – 7	Week 10	10
Assignment 3 (Job output, Procedures, Conditional JCL)	Week 12	15
Test 3 covering weeks 10 – 12	Week 13	10
Assignment 4 (Rexx Execs)	Week 15	15
2 hour Final Exam covering all unit material	TBA	25

5b Details of each assessment item

Tests are conducted in lectures as appropriate.

Tests are open book.

Assignments are work to be undertaken on the mainframe computer system within a specified time period. Some exercises may be required to be completed within a single Laboratory session.

Assignments all take the form of mainframe batch jobs. Students will be instructed on how to queue the output from a batch job on the mainframe print queue. Completed assignments must be on the mainframe print queue by the conclusion of the Laboratory session on the week when the assignment is due. For Mainframe Systems 1G held in semester 1 2009, laboratory sessions are held on Monday from 4.30pm to 6.30pm.

The Final Exam is open book.

5c Special assessment requirements

For final assessment in the subject, the result will be one of the following grades: HD, DI, CR, P, or Fail. The total mark is calculated by the following formula:

Assignment mark = Assignment 1 mark + Assignment 2 mark + Assignment 3 mark + Assignment 4 mark
Test mark = Test 1 mark + Test 2 mark + Test 3 mark
Total mark = Assignment mark + Test mark + Examination mark

Your final grade for the unit is the highest category in which your mark fits:

Total mark >= 85	HD
Total mark >= 75	DI
Total mark >= 65	CR
Total mark >= 50	P
The rest	FAIL (NX, NS, NC or NN)

5d Supplementary assessment
Not available for this unit.

5e Text-matching software
Not in use; however, the lecturer reserves the right to ask a student to attend extra oral defence to his/her assignment. Should it happen, the mark for the assignment will be based on the oral performance.

6: Student Responsibility

6a Workload
The amount of time you will need to spend on study in this Unit will depend on a number of factors including your prior knowledge, learning skill level and learning style. Nevertheless, in planning your time commitments you should note that for a 3cp Unit the total notional workload over the fifteen week semester is assumed to be 150 hours or an average of 10 hours per week. These hours include time spent in classes. The total workload for Units of different credit point value should vary proportionally. For example, for a 6cp Unit the total notional workload over a fifteen week semester is assumed to be 300 hours or an average of 20 hours per week.

6b Special needs
Students who need assistance in undertaking the unit because of disability or other circumstances should inform their Unit Convener or the Disabilities Office as soon as possible so the necessary arrangements can be made.

6c Attendance requirements

There will be no roll calls for lectures; however, students are encouraged to make every attempt to attend all scheduled teaching activities. Failing to do so may result in poor understanding and failure of the unit. Students should note that some assessable items are to be completed within the lecture time.

Similarly there will be no roll calls for Laboratory Sessions. Attendance is not mandatory however Laboratory sessions allow direct interaction with the lecturer and

other students providing a superior learning environment. Some Laboratory sessions may have assessable items to be completed within the laboratory time.

Special arrangements may be made for students who unavoidably cannot attend a lecture or Laboratory session involving assessable items. Please talk to your lecturer to make the arrangement.

6d Required IT skills

Common IT skills, such as writing a report electronically, using web browsers etc. are required.

6e Costs

Textbook, Web access and consumables.

6f Additional information

7: Student Feedback

All students enrolled in this Unit will have an opportunity to provide anonymous feedback on the Unit at the end of the Semester via the Unit Satisfaction Survey which will be presented to you on OSIS. Your lecturer or tutor may also invite you to provide more detailed feedback on their teaching through an anonymous in-class questionnaire administered through the University's Teaching and Learning Centre (TLC).

8: Authority of this Unit Outline

Any change to the information contained in Section 2 (Academic content), Section 3 (Delivery of Unit and timetable) and Section 5 (Assessment) of this document, will only be made by the Unit Convener if the written agreement of staff and a majority of students has been obtained; and if written advice of the change is then forwarded to each student enrolled in the Unit at their registered term address. Any individual student who believes him/herself to be disadvantaged by a change is encouraged to discuss the matter with the Unit Convener.