

**FACULTY of ENGINEERING and INFORMATION TECHNOLOGY  
DEPARTMENT of ENGINEERING**

**ENGN6612 and ENGN4612 Digital Signal Processing and Control**

**Course Outline and Assessment Schedule – Semester 2, 2005**

**1. Lecturers**

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**2. Lab Demonstrator**

Mr. Hendra Nurdin

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**3. Overview**

Building on a foundation of signals and systems fundamentals, this course will explore state space and optimal techniques, and current technology applications.

Signals and systems fundamentals	
State space and optimal techniques	Technology (applications)

**4. Schedule**

Week	ENGN4612 and ENGN6612			ENGN6612 only	
	<i>Lectures</i>	<i>Computer Labs: Matlab and theory exercises</i>	<i>Tutorial A: DSPC technology discussion sessions</i>	<i>Tutorial B: DSPC research paper discussion sessions</i>	
<b>1</b> (18Jul-24Jul)	Signals and systems fundamentals				
<b>2</b> (25Jul-31Jul)		CLAB1-even			
<b>3</b> (01Aug-07Aug)		CLAB1-odd			
<b>4</b> (08Aug-14Aug)	State space	CLAB2-even			
<b>5</b> (15Aug-21Aug)		CLAB2-odd			One page due
<b>6</b> (22Aug-28Aug)		CLAB3-even			
<b>7</b> (29Aug-02Sep)		CLAB3-odd			
<b>8</b> (19Sep-25Sep)	Optimal filtering	CLAB4-even			
<b>9</b> (26Sep-02Oct)		CLAB4-odd			
<b>10</b> (03Oct-09Oct)	Optimal control	CLAB5-even			
<b>11</b> (10Oct-16Oct)		CLAB5-odd			Report due
<b>12</b> (17Oct-23Oct)					
<b>13</b> (24Oct-30Oct)	Review		Presentations	Presentations & Report due	

## **5. Proposed Assessment**

### ENGN4612

Computer labs	20%
Tutorial report	30%
Tutorial presentation	10%
Exam	40%

### ENGN6612

Computer labs	20%
Tutorial report	20%
Tutorial presentation	10%
Research paper report	10%
Research paper presentation	10%
Exam	30%

Attendance at Computer Labs and Tutorials is strongly encouraged and will be recorded. This will be used to determine a discount factor applied to your assessment for that item. 100% attendance means a factor of 1, which means no reduction of marks. Less than 100% attendance means a reduction in marks.

Assessment of Computer Labs will be based on your successful completion of the required activities each week.

## **6. Aims and Objectives**

### *Lectures*

- to provide a common meeting point for all students in ENGN4612 and ENGN6612
- to present an overview and discussion of fundamentals, state space and optimal topics

### *Computer Lab*

- to provide the students with an opportunity to actively work on material from lectures
- Matlab computer activities
- theoretical exercises

### *Tutorial A – DSPC technology*

- to acquaint students with modern applications of DSPC
- to develop in students the ability to
  - self-learn
  - find, analyse and evaluate information
  - interpret information and communicate via written report and verbal presentation

### *Tutorial B – DSPC research paper (ENGN6612 only)*

- to acquaint students with moderns applications of DSPC
- to develop in students the ability to
  - read and understand a DSPC research paper
  - self-learn
  - find, analyse and evaluate information
  - interpret information and communicate via written report and verbal presentation

## **7. Modes of operation**

### *Tutorial A – DSPC technology*

1. discuss and decide on suitable topic for investigation
2. discuss and investigate topic
3. distill information
4. write report
5. deliver presentation

### *Tutorial B – DSPC research paper (ENGN6612 only)*

1. introduce research paper
2. provide any required background
3. discuss and investigate paper
4. distill information
5. write report
6. deliver presentation