

# Assignment 2

## Grades and Rules

Last updated: **Monday 6th November 8:50pm**

Most recent changes are shown in **red** ... older changes are shown in **brown**.

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## Introduction

This document contains a detailed description of how different kinds of rules are defined and what effects grades have in various contexts.

## Grades

Grades have different effects in different contexts:

- Req = used in satisfying Requirement
- UOC = used in calculating total UOC
- WAM = used in calculating WAM (add to UOC-for-WAM + marks)

Note that UOC is for all courses passed; the UOC used for WAM is for all courses attempted.

Grades	Req	UOC	WAM
A,B,C,D (with + or -)	yes	yes	no
HD,DN,CR,PS	yes	yes	yes
XE,T	yes	yes	no
SY,EC,RC	yes	yes	no
AF,FL,UF,E,F	no	no	yes
AS,AW,NA,PW,RD	no	no	no
NF,NC,LE,PE,WD,WJ	no	no	no
null	no	no	no

Note: AF has no associated mark; it is treated as if the mark were zero.

What to print on the transcript for each type of grade:

- Xuoc for A,B,C,D,HD,DN,CR,PS,XE,T,SY,EC,RC
- fail for AF,FL,UF,E,F
- unrs (unresolved) for AS,AW,PW,NA,RD,NF,NC,LE,PE,WD,WJ

Many of these grades do not appear in the database, and I don't include EM (excluded due to academic misconduct) which isn't really a grade applied to

individual courses. If you want to find what all these grades mean, take a look at the UNSW web site.

## Defining Requirements

This gives examples of how different kinds of requirements are defined in the MyMyUNSW database.

Code	Description	Acad Objects	Min/Max
stream	= satisfied all requirements for a stream	enumerated list of stream codes	# streams to complete
core	Core Courses; must complete all	list of course codes (no patterns, but may have alternatives (i.e. "{c1;c2}"))	set min/max to null
elective	Prescribed Electives	list of courses (enumerated or patterns)	must complete UOC between min and max; (max = null) means "at least min UOC"; (min = null) means "up to max UOC"; cannot both be null
free	Free Electives	special pattern "FREE#####"; anything not core or elective or gened can be a free elective	as for "elective"
gened	General Education	special pattern "GEN#####"; any course not core or elective can be GenEd (priority to courses with course codes like GEN#####**)	typically min = max = 12
uoc	Units of Credits needed	no academic objects	(max = null) means "at least min UOC"; (min = null) means "up to max UOC"; cannot both be null

\*\* In theory, you should reject GEs from within the faculty. Since this database is based on enrolment data, this shouldn't happen. And since doing this checks adds extra complexity, there's no need to check.

You can find out more about the kinds of rules in the database by asking a query on the `Requirements` table, to see how things are structured.

## Academic Object Groups

A critical part of describing requirements is the subject/stream info in the academic object group associated with each rule.

Note that each academic object group contains items of one particular type; either subjects or streams.

For this assignment, academic object groups are defined as comma-separated lists of items. Each item could be either a course or stream code, a choice of several courses, or a pattern, which identifies multiple courses. There are a wide variety of patterns. You should explore the `Requirements` table to see what's available. To give you a head start, here are some patterns and what they mean:

- `COMP1511,COMP1521,COMP1531 ...` core first year computing courses
- `{MATH1131;MATH1141} ...` alternatives; take one or the other
- `FREE####` ... any free elective; for this case, simply return the pattern itself\*\*
- `GEN#####` ... any Gen Ed course; for this case, simply return the pattern itself\*\*
- `####1###` ... any level 1 course at UNSW
- `COMP2###` ... any level 2 computing course (e.g. `COMP2511`, `COMP2041`)
- `COMP1###,COMP2###` ... first and second year COMP courses

Definitions such as the above are stored in the `acadobjs` field in the `Requirements` table.

## Requirements for some CSE Programs and Streams

Here are the requirements for each program and stream. They were derived from manual reading of the Handbook and some requirements have been simplified compared to the Handbook. It's possible that some rule sets don't accurately reflect the Handbook. All of the examples and test cases are based on what's in the database and may not precisely reflect reality.

```

1. # Requirements(id,name,rtype,min_req,max_req,acadobjs,fo
2. # Requirements.rtype = (core,elective,free,gened,stream,
3.
4. # Programs
5.
6. 3707    Bachelor of Engineering (Hons)
7.        stream 1      1      BE(Hons) Streams
8.        AEROAH,BINFAH,CEICAH,CEICDH,COMPBH,CVENA
9.        core    -      -      Industrial Training
10.        ENGG4999

```

11.	12	12	General Education
12.	GEN####		
13.			
14.	3778	Bachelor of Science (Comp Sci)	
15.	stream	1 1	Comp Sci Majors
16.		COMP1,COMP1D1,COMPE1,COMPI1,COMPJ1,COMP	
17.	core	- -	Foundational Computing
18.		COMP1511,COMP1521,COMP1531,COMP2511,COMP	
19.	core	- -	Comp Sci Maths
20.		MATH1081,{MATH1131;MATH1141},{MATH1231;M	
21.	core	- -	Comp Sci Advanced Core
22.		{COMP3121;COMP3821},COMP3900,COMP4920	
23.	GE	12 12	General Education
24.		GEN####	
25.			
26.	5543	Graduate Diploma in IT	
27.	core	- -	PG Core Courses
28.		COMP9021,COMP9024,COMP9311,COMP9331	
29.	elective	18 18	ADK Courses
30.		COMP4121,COMP4161,COMP4418,COMP6714,COMP	
31.	elective	30 30	Prescribed Elect
32.		COMP4###,COMP6###,COMP9###	
33.			
34.	7543	Graduate Certificate in IT	
35.	elective	24 24	Grad Cert Electi
36.		BINF9###,COMP4###,COMP6###,COMP9###	
37.			
38.	8543	Master of Information Technology	
39.	stream	1 1	MIT Streams
40.		COMPAS,COMPBS,COMPBS,COMPDS,COMPES,COMPI	
41.	core	- -	Project Management
42.		GS0E9820	
43.	core	- -	PG Core Courses
44.		COMP9021,COMP9024,COMP9311,COMP9331	
45.	core	- -	MIT Project Courses
46.		{COMP9900;COMP9991}	
47.	elective	36 36	ADK Courses
48.		COMP4121,COMP4161,COMP4418,COMP6714,COMP	
49.			
50.			
51.	# Streams		
52.			
53.	COMP1	Computer Science	
54.	elective	30 -	COMP1 Computing
55.		ENGG2600,ENGG3600,ENGG4600,COMP3###,COMP4	
56.	free	36 -	COMP1 Free Electives
57.		FREE####	
58.			
59.	COMPAS	Artificial Intelligence	
60.	core	- -	COMPAS Core
61.		{COMP9414;COMP9814}	
62.	elective	18 18	COMPAS Electives
63.		COMP4418,COMP9318,COMP9417,COMP9418,COMP	
64.	elective	- 6	COMPAS Disciplin
65.		BINF6###,BINF9###,COMP4###,COMP6###,COMP	
66.			
67.	COMPBH	Computer Engineering	
68.	core	- -	Foundational Computing
69.		COMP1511,COMP1521,COMP1531,COMP2511,COMP	
70.	core	- -	COMPBH Maths
71.		{MATH1131;MATH1141},{MATH1231;MATH1241},	
72.	core	- -	COMPBH Physics and Elect
73.		{PHYS1121;PHYS1131},{PHYS1221;PHYS1231},	
74.	core	- -	COMPBH Design
75.		{ENGG1000;DESN1000},DESN2000	
76.	core	- -	COMPBH Advanced Core

77.			COMP3211,COMP3222,COMP3231,COMP3601,COMP
78.	elective	36	- COMPBH Computing
79.			ENGG2600,ENGG3060,ENGG3600,ENGG4600,COMP
80.			
81.	COMPBS	Bioinformatics	
82.	core	-	- COMPBS Core
83.			BINF9010,BINF9020
84.	elective	18	18 COMPBS Electives
85.			COMP9318,COMP9417,MATH5846,MATH5856
86.	elective	-	6 COMPBS Disciplin
87.			BINF6###,BINF9###,COMP4###,COMP6###,COMP
88.			
89.	COMPCS	Computer Science	
90.	elective	24	24 COMPCS Disciplin
91.			BINF6###,BINF9###,COMP4###,COMP6###,COMP
92.			
93.	COMPDI	Database Systems	
94.	core	-	- COMPDI Core
95.			COMP3311
96.	elective	18	18 COMPDI Electives
97.			COMP6714,COMP9312,COMP9313,COMP9315,COMP
98.	elective	6	- COMPDI Computing
99.			ENGG2600,ENG3600,ENGG4600,COMP3###,COMP4
100.	free	36	- COMPDI Free Electives
101.			FREE####
102.			
103.	COMPDS	Database Systems	
104.	elective	18	18 COMPDS Electives
105.			COMP6714,COMP9312,COMP9313,COMP9315,COMP
106.	elective	-	12 COMPDS Disciplin
107.			BINF6###,BINF9###,COMP4###,COMP6###,COMP
108.			
109.	COMPE1	eCommerce Systems	
110.	core	-	- COMPE1 Core
111.			COMP3311
112.	elective	18	18 COMPE1 Electives
113.			COMP3511,COMP9321,COMP9322,COMP9323
114.	elective	6	- COMPDI Computing
115.			ENGG2600,ENG3600,ENGG4600,COMP3###,COMP4
116.	free	36	- COMPDI Free Electives
117.			FREE####
118.			
119.	COMPES	eCommerce Systems	
120.	elective	18	18 COMPES Electives
121.			ACCT5922,COMP6324,COMP6452,COMP9313,COMP
122.	elective	-	12 COMPES Disciplin
123.			BINF6###,BINF9###,COMP4###,COMP6###,COMP
124.			
125.	COMPI1	Artificial Intelligence	
126.	core	-	- COMPI1 Core
127.			COMP3411
128.	elective	18	18 COMPI1 Electives
129.			COMP3431,COMP4418,COMP9318,COMP9417,COMP
130.	elective	6	- COMPI1 Computing
131.			ENGG2600,ENG3600,ENGG4600,COMP3###,COMP4
132.	free	36	- COMPI1 Free Electives
133.			FREE####
134.			
135.	COMPIS	Internetworking	
136.	elective	18	18 COMPIS Electives
137.			COMP9332,COMP9334,COMP6733,COMP9336,COMP
138.	elective	-	12 COMPDS Disciplin
139.			BINF6###,BINF9###,COMP4###,COMP6###,COMP
140.			
141.	COMPJ1	Programming Languages	
142.	core	-	- COMPJ1 Core

143.		COMP3161			
144.	elective	18	18	COMPJ1 Electives	
145.		COMP3131,COMP3141,COMP3151,COMP6771			
146.	elective	6	-	COMPJ1 Computing	
147.		ENGG2600,ENG3600,ENGG4600,COMP3###,COMP4			
148.	free	36	-	COMPJ1 Free Electives	
149.		FREE####			
150.					
151.	COMPJ1	Computer Networks			
152.	core	-	-	COMPJ1 Core	
153.		COMP3331			
154.	elective	18	18	COMPJ1 Electives	
155.		COMP4336,COMP4337,COMP6733,COMP9332,COMP			
156.	elective	6	-	COMPJ1 Computing	
157.		ENGG2600,ENG3600,ENGG4600,COMP3###,COMP4			
158.	free	36	-	COMPJ1 Free Electives	
159.		FREE####			
160.					
161.	COMPS1	Embedded Systems			
162.	core	-	-	COMPS1 Core	
163.		COMP2121,COMP3222			
164.	elective	18	18	COMPS1 Electives	
165.		COMP3211,COMP3231,COMP3601,COMP4601,COMP			
166.	elective	6	-	COMPS1 Computing	
167.		ENGG2600,ENG3600,ENGG4600,COMP3###,COMP4			
168.	free	30	-	COMPS1 Free Electives	
169.		FREE####			
170.					
171.	COMPSS	Data Science and Engineering			
172.	elective	6	12	COMPSS Algos/Sta	
173.		COMP4141,COMP6741,MATH5845,MATH5855,MATH			
174.	elective	6	12	COMPSS Databases	
175.		COMP9313,COMP9315,COMP9318,COMP9319,COMP			
176.	elective	6	12	COMPSS Machine L	
177.		COMP4418,COMP6714,COMP9417,MATH5836,COMP			
178.	elective	-	6	COMPSS Disciplin	
179.		BINF6###,BINF9###,COMP4###,COMP6###,COMP			
180.					
181.	COMPY1	Security Engineering			
182.	core	-	-	COMPY1 Core	
183.		{COMP6441;COMP6841}			
184.	elective	18	18	COMPY1 Electives	
185.		COMP4337,{COMP6443;COMP6843},{COMP6445;C			
186.	elective	6	-	COMPY1 Computing	
187.		ENGG2600,ENG3600,ENGG4600,COMP3###,COMP4			
188.	free	30	-	COMPY1 Free Electives	
189.		FREE####			
190.					
191.	SENGAH	Software Engineering			
192.	core	-	-	Foundational Computing	
193.		COMP1511,COMP1521,COMP1531,COMP2511,COMP			
194.	core	-	-	SENGAH Maths	
195.		MATH1081,{MATH1131;MATH1141},{MATH1231;M			
196.	core	-	-	SENGAH Workshops/Design	
197.		{DESN1000;ENGG1000},DESN2000,SENG2011,SE			
198.	core	-	-	SENGAH Advanced Core	
199.		COMP2041,COMP3141,COMP3311,COMP3331,SENG			
200.	elective	36	-	SENGAH Disciplin	
201.		ENGG2600,ENGG3060,ENGG3600,ENGG4600,COMP			
202.	free	6	6	SENGAH Free Electives	
203.		FREE####			
204.					