MMAN1130

8 Yg][b˙UbX˙A Ubi ZUWï f]b[

HYfa ˙Hk c ˙˙## ˙&$&%

7ci fgY Cj Yfj]Yk

GhJZZ 7cbHJWh 8YHJ]`g

7cbjYbcfg

BUa Y	9a U]`	5j U]`UV]`]hm	@cWUh]cb	D\cbY
8Ub]Y `9[[`Yf	X"Y[[`Yf4 i bgk "YXi "Ui	9a U]` hc Vcc_ U Wcbgi `HUh]cb	($&< ž 5]bgk cfh\ 6i]X]b[	

GWXcc` 7cbHJWh +bZcfa Uh]cb

@cWUh]cb

I BGK A YWXUb]WU` UbX A Uni ZUWh f]b[9b[]bYYf]b[

5]bgk cfh\ Vi]X]b[`>%+ž @vj Y `%

5Vcj Y 7cZYY cb 7Ua di g

< ci fg

-.$$—).$$da ž A cbXUm—: f]XUm

ł 7 cgYX cb di V]W\ c]XUmg ž GWXcc` gWXYXi YX j Ybhg UbX I b]j Yfg]hm G\i hXck b

K YV

[GWXcc`cZ A YWXUb]WU` UbX A Uni ZUWh f]b[9b[]bYYf]b[](#)

[9b[]bYYf]b[Ghi XYbh Gi ddcfh GYfj]WYg](#)

[9b[]bYYf]b[+bXi ghf]U` HfU]b]b[](#)

[I BGK Ghi Xm 5VfcUX UbX 9I WXUb[Y fZcf]bVci bX ghi XYbhgł](#)

[I BGK : i hi fY Ghi XYbhg](#)

D\cbY

f ž *% &Ł-',) ',) $$—Bi WYi g Ghi XYbh< i V

f ž *% &Ł-',) +* *%—9b[]bYYf]b[+bXi ghf]U` HfU]b]b[

f ž *% &Ł-',) ' %+-—I BGK Ghi Xm 5VfcUX UbX I BGK 9I WXUb[Y fZcf]bVci bX ghi XYbhgł

f ž *% &Ł-',) ($-+—GWXcc` CZZ]WY

ł D`YUgY bchY h\Uh h\Y GWXcc` CZZ]WY `k]``bch_bck k \Yb Zmci f Vci fgY Vcbj Ybcf]g cb Wa di g cf Uj U]`UV`Y

7ci fgY 8YHJ]`g

7fYX]hDc]bhg *

Gi a a UfmcZh\Y 7ci fgY

<Uj Y mci Yj Yf Vcbg]XYfYX \ck k Y a U_Y XYv]W g UbX a UV]bYg3 K cbXYfYX \ck U WЮf Yb[]bY k Ug a UXY

and appropriately from these sites.

In class. There are three in-class activities in a typical week which we refer to as the Lecture, Tutorial and CAD/CAM Lab based on the immersive session. The content and segments of this course are organised on the following principles:

1. **Learning.** Student learning is the first priority; teaching and assessment are secondary concerns. Learning here is defined as gaining new ways of understanding the field of design and manufacturing in mechanical engineering... We are firm in our aim to transform you into a better and richer understanding of the discipline.

2. **Peer-interaction.** Learning is a social activity, and research shows that you will learn most and best when you are actively engaged with your peers and, in turn, when you teach them.

3. **Authenticity.** We will have as much authenticity of engineering practice as is possible within the constraints of the course and where it does not restrict your learning.

4. **High standards.** We will set high standards for achievement in the course, and everyone (including staff) will be accountable for putting in the effort to get you to the standard.

5. **Openness.** As much as possible, this course will be conducted in the open where all participants can be aware of what is happening and comment upon it.

6. **Process.** The focus of the course will be on processes, not outcomes. The right outcomes will be always a product of following the correct processes.

The lectures in this course will cover core concepts and provide background theory in manufacturing and engineering design. The lecture material is available to students electronically before each class via Teams.

The CAD and CAM Labs are designed to allow you to practise critical skills in the areas of computer-aided design and manufacture. Pre-lab work will be available before the start of class and these are to be worked through in your own time. During the labs the pre-lab work will be expanded upon with opportunity to seek assistance in areas of difficulty.

The Tutorials will provide a connection that will assist the link between the practical skills being taught, the concepts being introduced in the lectures and highlight how these are related when designing and manufacturing in the real world.

Additional Course Information

This is a 6-unit of credit (UOC) course and involves 6 hours per week (4/2) of scheduled contact.

The normal workload expectations of a student are approximately 25 hours per term for each UOC, including in-class contact hours, other learning activities, preparation and time spent on all assessable work.

You should aim to spend about 1.5× the contact time on this course. The additional time should be spent in making sure that you understand the lecture material, completing the class assignments, further reading, and revising for any examinations.

5ggYgga Ybh

8YHU]`YX`]bZcfaUh]cb`cb`U``UggYgga Ybhg`]g`UjU]`UV`Y`h\fci[\`h\YUa g"

5ggYgga YbhHUg_g

5ggYgga YbhHUg_	KY][\h	8iY8UhY	GhiXYbh@YUfb]b[CihWca Yg5ggYggYX
7ca di hYf!U]XYX 8Yg][b G_]``g	($ι	KYY_`(`: f]XUm#KYY_`+ : f]XUm	(ž)ž*ž+
7B7 A UW\]b]b[5ggYgga Ybh	&)ι	:]Y Gi Va]gg]cb !`KYY_`,`ž HYgh]b[ !`9lUa `DYf]cX	'ž(ž)ž*
5gg][ba Ybh	')ι	KYY_`%$`!`: f]XUm	%ž&ž*ž+

5ggYgga Ybh8YHU]`g

5ggYgga Ybh% 7ca di hYf!U]XYX 8Yg][b G_]``g

GHUfhXUhY.`Bch5dd`]WUV`Y

8YHU]`g.

HYgh]b[`Wca di hYf!U]XYX`XYg][b`g_]``g`WcjYf]b[`Yb[]bYYf]b[`XfUk]b[gžWca di hYf!U]XYX`XYg][b`UbX Wca di hYf!U]XYX`a Ubi ZUWhifY"

5XX]h]cbU``XYHU]`g.

&`!`&$ι`hYghg"`HYgh`%`UbX`&`k]``VY`\Y`X`]b`KYY_g`(`UbX`+`Xi f]b[`h\Y`: f]XUm`YWhi fYžfYgdUhYHjY`ym`: ]Yg            k YY_g`a i ghVY`gi Va ]hhYX`hc`A ccX`Y`Ug`dUf`]bghfi Wh]cbg`]b`h\Y`hYgh`dUdYf"`A Uf_g`UfY`hc`VY`fYhi fbYX`k ]h\]b`hk c k YY_g`cZ`h\Y`hYgh"

5ggYgga Ybh&. 7B7 A UW\]b]b[5ggYgga Ybh

GHUfhXUhY.`Bch5dd`]WUV`Y **Not Applicable**

8YHU]`g.

8Yg][bž`758ž75A `UbX`a Ubi ZUWhifY`Wca dcbYbhg`i g]b[`7B7`a UW\]bYfm`

5XX]h]cbU``XYHU]`g.

@Yb[h\.¨I d¨hc¨&\$¨dU[Yg

8YhlJ]`g.

7UgY¨ghi X]Yg¨UbX¨[i]XYX¨ei Ygh]cbg¨UVci hh\Y¨`]b_¨VYhk YYb¨XYg][b¨UbX¨a Ubi ZUW i fY"

5XX]h]cbU`¨XYhlJ]`g.

Gi Va]gg]cb¨hc¨Hi fb]h]b¨Vcl ¨]b¨A ccX`Y¨Ug¨dYf¨UggYgga Ybh[ i ]XY`]bYg"¨A Uf_g¨hc¨VY¨fYhi fbYX¨i dcb¨fY`YUgY¨cZZ]bU`¨a Uf_g"

5ttYbXUbWFYei YfYa Ybtg

Gti XYbtg UfY gtfcb[`mYbWci fU[YX hc UttYbX U ``WUggYg UbX fYj ‰

5ttYbXUbWFYei YfYa Ybtg

K YY_ '%$. '& '5i [i gh! ' * 5i [i gh	Hi H@UV	7 5 8 '@UVg. 'C dYb '7 cbgi `Uh]cb

UggYgga Ybh'dYfZcfa UbW'ž'mci `UfY`Y`][`]V`Y`hc`Udd`m'Zcf'GdYW'JU``7cbg]XYfUh]cb`df]cf`hc`gi Va`]h'b][``Ub
UggYgga Ybh'cf'g]h']b[`Ub`YI Ua`"

I BGK `bck `\Ug`U`:_]hh'c`G]h#Gi Va`]hfi`Yž'k \]WX`a YUbg`h\Uh]Zmci `Uh'Ya dh'Ub`YI Ua`cf'gi Va`]hU'd]YWY`cZ
UggYgga Ybh'ž'mci `UfY`XYW'Uf]b[``mci fgY`ZZ]h'Ybci [`\`hc`Xc`gc`UbX`Wabbch`Uh'f'Udd`m'Zcf`GdYW'JU`
7cbg]XYfUh]cb"

: cf'XYh'U]`g`cZUdd`m]b[`Zcf`GdYW'JU``7cbg]XYfUh]cb`UbX`WcbX]h]cbg`Zcf'h\Y`Uk'UfX`cZgi dd`Ya Ybh'Ufm
UggYgga Ybh'ž'd`YUgY`gYY`h\Y`]b'ZZcfa Uh]cb`cb`I BGK `g`GdYW'JU``7cbg]XYfUh]cb`dU[`Y"

D`YUgY`bchY`h\Uh'gui XYbhg'k]``bch'VY`fYei ]fYX`hc`dfcj ]XY`Ubm'XcW'a YbhUfm'j]XYbW'`hc
gi ddcfh'UVgYbW'g'Zca `UbmWUggYg'a ]ggYX`VYWUi gY`cZ7CJ 8!% `di V`]W\YU`h\`a YUgi fYg'gi WX`Ug
]gc`Uh]cb"I BGK `k]``bch'VY`]bg]gh]b[`cb`a YX]W'U``WYfh]ZWUhYg'Zca `UbmcbY`XYYa YX`hc`VY`U'dcg]h]j Y`WUgYž
cf'k \Yb`h\Ym`\Uj Y`fYWcj YfYX"Gi WX`WYfh]ZWUhYg'UfY`X]ZZWi `h'hc`cVhU]b`UbX`di h'Ub`i bbYW'YggUfm'ghfU]b`cb
ghi XYbhg'UbX`a YX]WU``ghUZZ'

5dd`]WUh]cbg'Zcf'gdYW]U``Wbg]XYfUh]cb`k]```VY`fYei ]fYX`Zcf'UggYgga Ybh'UbX`dUfh]W]dUh]cb`UVgYbWg`—
Vi h'bc`XcW'a YbhUfm']XYbW'`Zcf'7CJ 8`% `]``bYgg`cf']gc`Uh]cb`k]```VY`fYei]fYX"

5WWXYa]W <cbYghm UbX D`U[ ]Uf]ga

I BGK `\Ug Ub cb[c]b[ Wca a ]ha Ybh hc Zcgh Yf]b[ U W`hi fY cZ `YUfb]b[ ]bZcfa YX Vm UWUXYa ]W ]bhY[ f]hm `5``
I BGK gh XYbhg \Uj Y U fYgdcbg]V]`]hm hc UX\YfY hc h\]g df]bW]d`Y cZ UWUXYa]W]bhY[f]hm `D`U[ ]Uf]ga
i bXYfa]bYg UWUXYa]W]bhY[f]hm UbX g bch h\Y YfUhYX Uh I BGK "`B¬SY[Sd[e_ SfG@EI  {e VWX[`WW Se ge[`Y
fZWi adVe ad[VWSe aXafZWde S`V bSee[`Y fZW_ aXXSe kagdai `ž

D`U[ ]Uf]ga]g U hmdY cZ]bhY``YWhi U` h\YZh ¦hWUb hU_Y a Ubm Zcfa g žZc_a  XY`VYfUhY`X YUh]b[ `hc UWW]XYbhU`m
Wcdm]b[`Zca `U`gci fWY k ]h\ ci hUW_bck `YX[Ya Ybh`I BGK `\Ug dfcXi WYX U `k YVg]hY k ]h\ `U k YU`h\ `cZ
fYgci fWYg `hc gi ddcfh`gh XYbhg `hc i bXYfghUbX`UbX`Uj c]X`d`U[ ]Uf]ga žj ]g]h h ghi XYbh`i bgk "YXi "Ui #d`U[ ]Uf]ga "
H\Y `@YUfb]b[ `7YbhfY `Ugg]ghg`gh XYbhg k]h\ `i bXYfghUbX]b[ `UWUXYa]W]bhY[f]hm UbX `ck `bch hc `d`U[ ]Uf]gY"
H\Ym U`gc `\c`X`k cf_g\cdg `UbX `WUb `\Y`d gh XYbhg `cbY!cb!cbY"

Mci `UfY `U`gc `fYa]bXYX `h\Uh WUfYZ ``ha Y a UbU[Ya Ybh `g Ub]a dcfhUbh dUfh cZ gh XmUbX cbY cZ h\Y
]XYbh]Z]YX `WUi gYg cZ d`U[ ]Uf]ga `]g dccf h]a Y a UbU[ Ya Ybh`Gh XYbhg g \ci `X `U`kU`ck `gi ZZ]W]Ybh h]a Y`Zcf
bXYfa]bYYk cfXYbhg g\`A `gWcZXY`U`DWYWUi #cbgH   ‰   ‰

5WUXYa]W±bZcfa Uh]cb

7fYX]hdc]bhg

7cifgY`WfYX]hg`WU`W`UhYX`]b`I`b]hg!CZ`7fYX]hf`I`C`Ł"H\Y`bcfa`U`k`cf_`cUX`Yl`dYWHUh]cb`Zcf`cbY`I`C`7

- A ccX`Y
- @UV´5WWgg
- 7 ca di h]b[˙: UW]h]Yg

Appendix: Engineers Australia (EA) Professional Engineer Competency Standard

Program Intended Learning Outcomes	
Knowledge and skill base	
PE1.1 Comprehensive, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the engineering discipline	
PE1.2 Conceptual understanding of the mathematics, numerical analysis, statistics, and computer and information sciences which underpin the engineering discipline	