

UNIVERSITY OF WARWICK

Proposal Form for New or Revised Modules (MA1 - version 7 - April 2014)

Approval information	
Approval Type	<input type="checkbox"/> New module <input checked="" type="checkbox"/> Revised module <input type="checkbox"/> Discontinue module
Date of Introduction/Change	October 2018
If new, does this module replace another? If so, enter module code and title:	.
If revised/discontinued, please outline the rationale for the changes:	Modified module availability to remove MEng Electronic Engineering, who no longer require access to the module.
Confirmation that affected departments have been consulted:	Changes were made in consultations between the School of Engineering and WMG. Computer Science Department consulted via the Computer Systems Engineering Steering Committee

Module Summary	
1. Module Code (if known)	ES4E9
2. Module Title	Affective Computing
3a. Lead department:	School of Engineering
3b. Teaching Split (if known):	School of Engineering : 100 %
4. Name of module leader	Dr T Tjahjadi
5. Level	UG: <input type="checkbox"/> Level 4 (Certificate) <input type="checkbox"/> Level 5 (Intermediate) <input type="checkbox"/> Level 6 (Honours) PG: <input checked="" type="checkbox"/> Level 7 (Masters) <input type="checkbox"/> Level 8 (Doctoral) See Guidance Notes for relationship to years of study
6. Credit value(s) (CATS)	15
7. Principal Module Aims	This module aims to introduce theories on how affective factors influence interactions between humans and technology, on how affect sensing can inform our understanding of human affect, and on the design and implementation of effective human-machine interfaces.

Module Summary	
8. Principal Learning Outcomes	<p>By the end of the module students should be able to:</p> <ul style="list-style-type: none"> • Demonstrate an advanced understanding of the complex theories underpinning affective computing; • Evaluate and implement the principles of automated facial expression recognition; • Analyse and implement the principles of automated body language recognition. • Examine the principles of physiology for affective computing. • Critique the applications of affective computing in human-robot interactions, unobtrusive deception detection and health monitoring.
9. Timetabled Teaching Activities (summary)	<p>Lectures 25 x 1 hr = 25 hr Seminars 5 x 1 hr = 5 hr Laboratory class 1 x 3 hr = 3 hr Tutorials 3 x 1 hr = 3 hr Total 36 hours</p>
10. Departmental Web-link	http://www2.warwick.ac.uk/fac/sci/eng/eso/modules/year4
11. Other essential notes	Advice and feedback hours are available for answering questions on the lecture material (theory and examples) and past examination questions.
12. Assessment methods (summary)	<p>80% examination (3hr paper); 10% assessed by 1000 word laboratory-based report 10% assessed by seminar quiz.</p>

For use by Strategic Planning and Analytics Office only - Do not fill in this section

Level	JACS3 Code	Teaching Split
		<i>If not provided in 3b above</i>

External Credit Level		Scheme	

Module Context				
13. Please list all departments involved in the teaching of this module. If taught by more than one department, please indicate percentage split.				
School of Engineering				
14. Availability of module				
Degree Code	Title	Study Year	C/OC/A/B/C	Credits
G408	MEng Computer Systems Engineering	4	A	15
HH63	MEng Systems Engineering	4	A	
HH64	MEng Systems Engineering with Intercalated Year	5	A	
HH65	MEng Systems Engineering with a Year in Research	5	A	
New	MEng Systems Engineering with Exchange Year	4	A	
H107	MEng Engineering	4	A	
H109	MEng Engineering with Intercalated Year	5	A	
H110	MEng Engineering with a Year in Research	5	A	
New	MEng Engineering with Exchange Year	4	A	
15. Minimum number of registered students required for module to run				
10				
16. Pre- and Post-Requisite Modules				
ES2B4 Computer Engineering and Programming or CS188 Programming for Computer Scientists or equivalent; and ES3C5 Signal Processing or equivalent.				

Module Content and Teaching	
17. Teaching and Learning Activities (<i>totals for module – please see guidance</i>)	
Module duration (weeks)	10
Lectures	25
Seminars	5 x 1 hr
Tutorials	3 x 1 hr
Project Supervision	
Demonstration	1 laboratory class (3 hr)
Practical Class/Workshops	
Supervised time in studio/workshop	
Fieldwork	

Module Content and Teaching		
External visits		
Work based learning		
Placement		
Year abroad		
Other activity <i>(please describe): e.g. distance-learning, intensive weekend teaching etc.</i>	114 hours guided independent learning.	
18. Assessment Method (Standard)		
Type of assessment	Length	% weighting
Written Examinations	3 Hours	80
Practical Examinations	---	
Assessed essays/coursework	1 laboratory-based report 1000 Words (excluding figures)	10
	1 seminar quiz	10
18a. Final chronological assessment <i>(please see guidance)</i>	Written examination	

19. Methods for providing feedback on assessment.
Laboratory report: mark and comments; Seminar quiz: mark and comments; Written examination: mark. Cohort level feedback on examinations.
20. Outline Syllabus
<p>Theoretical underpinnings of affective computing from an interdisciplinary perspective encompassing the affective, cognitive, social, media, and brain sciences.</p> <p>Affect recognition from facial expressions, body language, speech, physiology, contextual features, and multimodal combinations of these modalities.</p> <p>Applications of affective computing in human-robot interactions, unobtrusive deception detection and health monitoring.</p>
21. Illustrative Bibliography
<p>Calvo RA, D'Mellor SK, Gratch J, Kappas A (Eds), The Oxford Handbook of Affective Computing, Oxford University Press, 2015, ISBN: 9780199942237.</p> <p>Peter C, Beale R (Eds), Affect and Emotion in Human Computer Interaction: From Theory to Applications, Springer, 2008, ISBN: 9783540850984.</p> <p>Picard R, Affective Computing, MIT Press, 2000, ISBN: 9780262661157.</p>
22. Learning outcomes

Successful completion of the module leads to the learning outcomes. The learning outcomes identify the knowledge, skills and attributes developed by the module.

Learning Outcomes should be presented in the format "By the end of the module students should be able to..." using the table at the end of the module approval form:

Resources

23. List any additional requirements and indicate the outcome of any discussions about these.

Approval	
24. Module leader's signature	Dr Tardi Tjahjadi
25. Date of approval	20 March 2018
26. Name of Approving Committee (include minute reference if applicable)	School of Engineering and WMG Course and Module Approval Committee Minute 164-17/18
27. Chair of Committee's signature	Professor Gillian Cooke
28. Head of Department(s) signature	Professor David Towers

Examination Information		
A1. Name of examiner (if different from module leader)		
A2. Indicate all available methods of assessment in the table below		
% Examined	% Assessed by other methods	Length of examination paper
80		3 hours
	10	1000 word (excluding figures) report
	10	1 seminar quiz (4 pages)
A3. Will this module be examined together with any other module (sectioned paper)? If so, please give details below.		
A4. How many papers will the module be examined by?	<input checked="" type="checkbox"/> 1 paper <input type="checkbox"/> 2 papers	
A5. When would you wish the exam take place (e.g. Jan, April, Summer)?	Summer	
A6. Is reading time required?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
A7. Please specify any special exam timetable arrangements.		
A8. Stationery requirements		
No. of Answer books?	1	
Graph paper?	Yes	
Calculator?	Yes (non-programmable)	
Any other special stationery requirements (e.g. Data books, tables etc)?	Engineering data book	
A9. Type of examination paper		
Seen?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Open Book?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

Examination Information	
Restricted?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If restricted, please provide a list of permitted texts:	

LEARNING OUTCOMES		
(By the end of the module the student should be able to....)	Which teaching and learning methods enable students to achieve this learning outcome? (reference activities in section 15)	Which summative assessment method(s) will measure the achievement of this learning outcome? (reference activities in section 16)
Demonstrate an advanced understanding of the complex theories underpinning affective computing.	Lectures and seminars	Written examination and seminar quiz.
Evaluate and implement the principles of automated facial expression recognition	Lectures and laboratory exercise	Written examination and laboratory report.
Analyse and implement the principles of automated body language recognition.	Lectures and laboratory exercise	Written examination and laboratory report.
Examine the principles of physiology for affective computing.	Lectures.	Written examination.
Critique the applications of affective computing in human-robot interactions, unobtrusive deception detection and health monitoring.	Lectures and seminars.	Written examination and seminar quiz.