UNIVERSITY OF SALFORD FORM MS

MODULE SPECIFICATION

Please contact your College Learning and Teaching Team for guidance completing this form:
Colleges of Arts & Social Sciences and of Business & Law – cass-tandlteam@salford.ac.uk
College of Health and Social Care – chsc-teaching@salford.ac.uk
College of Science and Technology – cst-tl@salford.ac.uk

This form is available to download from http://www.governance.salford.ac.uk/page/aqa_forms).

Date of completion of this version of Module Specification: 12/01/2016				
Date of approval by the USP: 26/01/2016				
1. Module Title: (Full title and short title no more than 30 characters) Principles of Acoustics				2.CRN: 17786 (S4)
3.University module code: J930 20018			4.HESA/JACS subject area code[i]: J930	
5.Level: Level 5	6.Credit Value: 20	7.ECTS Value[ii]: 10	8.Length of module in semesters: 2	9.Month(s) in which to be offered[iii]: September
10.Module Status[iv] Existing	11.Title of Module being replaced *(if any):*			12.With effect from[v] (academic year): 2015-2016
13.Originating School: School of Computing, Science & Engineering	14.Module Leader(s) Olga Umnova			

15.Programme(s) in which to be offered[vi]:

BEng(Hons) Audio Acoustics: Acoustic Engineering
BEng(Hons) Audio Acoustics: Acoustic Engineering with Professional Experience
BEng(Hons) Audio Acoustics: Audio Engineering
BEng(Hons) Audio Acoustics: Audio Engineering with Professional Experience
BSc (Hons) Physics
BSc (Hons) Physics with Professional Experience
BSc (Hons) Physics with Acoustics
BSc (Hons) Physics with Acoustics with Professional Experience
BSc (Hons) Pure & Applied Physics
BSc (Hons) Pure & Applied Physics with Professional Experience
MPhys (Hons) Physics
MPhys (Hons) Physics with Professional Experience
MPhys (Hons Physics with Acoustics
MPhys (Hons) Physics with Acoustics with Professional Experience
MPhys (Hons) Physics with Studies in North America

16.Pre-requisites *(between levels):* None	17.Co-requisites *(within a level):* None

18.Indicative learning hours (breakdown of hours required)[vii] 200

Lecture	44	Fieldwork	
Seminar		External visits	
Tutorial		Work based learning	
Project supervision		Guided independent study	146
Demonstration Practical classes and workshops	6	Placement	
Supervised time in studio/workshop		Year abroad	
Other – please specify[viii]	4 computer workshop		

19.Percentage of module taught by School(s) other than originating School: 0%

20.Aims of Module[ix]: (maximum of 5)

1. To provide the students with the knowledge and critical understanding of the fundamental principles of acoustics
2. To develop skills in the application of these fundamental principles to solve acoustical problems

21.Intended Learning Outcomes[x]

Knowledge and Understanding (maximum of 5)[xi]
On successful completion the student will be able to:

1 Demonstrate knowledge and critical understanding of the principles of acoustics, including vibrations, resonances, wave equation, types of wave, characteristics of sources and impedance.[1]
2 Solve acoustical problems by the application of these fundamental principles.[2]
3 Understand and apply these fundamental principals in a practical context in the laboratory and through computer modelling.[3]
4 Communicate the results of experiments and calculations in structured reports.[4]

(Superscripts used to map intended learning outcomes to assessment)

Transferable/Key Skills and other attributes (maximum of 5)

On completion the student will have had the opportunity to:

5 Application of number[a]: manipulation of equations.
6 Communication[b]: presentation of assignment work.
7 Information Technology[c]: use of Matlab and on-line material.
8 Managing Learning[d]: independent study using e-learning material, time management doing assignment work, preparing for examination.
9 Problem Solving[e]: solving tutorial problems and assignment work.
10 Working with others[f]: none.

22. Module mark calculation: Method A

23.Assessment components (in chronological order of submission/examination date)
Denote final assessment component in box marked **final assessment component (99)**

Type of assessment	Identify which ILO is met by number[xii]	Weighting %	Duration	Word count	Component pass required[xiii]	E Submission	Assessment organised by
Coursework[a,b,c,d]	3,4	60			No	Choose an item.	School
					Choose an item.	Choose an item.	Choose an item.
Final assessment component (99) Examination[a,d,e]	1,2	40	2 hours		No	No	SID

24. Is ethical approval for the module required?	No	25. Is ethical approval for an assessment component required?[xiv]	No

26.Learning, teaching and assessment strategies:

Lectures covering theoretical materials
Tutorials solving acoustic problems
Workshop sessions in a computer lab
Acoustics laboratory sessions
Private study using notes and online material

27.Syllabus outline:

- Mechanical vibrations. Free and forced vibrations. Role of intial conditions. Mechanical impedance. Resonance.
- Fourier theorem. Fourier synthesis.
- Plane acoustic waves in fluids. Pressure, particle velocity, intensity and power. Characteristic acoustic impedance. Resonaces in open and closed pipes.
- Impedance discontinuity – reflection and absorption coeffcients
- Standing waves. Impedance tube.Surface impedance.
- Wave equation.
- Sperical wave – radiation from pulsating sphere. Monopole.
- Radiation by dipole and doublet.
- Radiation by column and line sources. Directivity pattern.
- Radiation by a circular piston – axial responce and far feld directivity.
- Radiation impedance

28.Indicative texts and/or other learning materials/resources[xv]:

After initial approval, up to date reading lists can be accessed at https://salford.rl.talis.com/index.html
Note: This replaces the LaSU reading lists from September 2015 onwards.

For Office Use only:

Teaching and Learning Team Comments:	Module spec brought as part of Physics PPRR on 26 Jan 2016.

---

i See UoS guidance notes on selecting JACS codes (http://www.planning.salford.ac.uk/jacs_codes/) see HESA JACS Codes webpage http://www.hesa.ac.uk/index.php/content/view/356/233/

ii The ECTS value is half of the module credit value

iii Please indicate the month (s) in which delivery of the module will commence.

iv Amendments to the title or credit value constitute a new module.

v If the delivery month of the module is to be available for different intakes of a programme, please indicate this here. E.g. Module effective from Sept 2014 – to state the module is to be available for Sept 2014 intake & Feb 2014 intake.

vi The module will only be attached to programmes specified in this section. Any approved module can be available as a stand-alone module.

vii These categories are used for the Key Information Set which currently applies only to full time undergraduate students only but please include for all students – for more information including definitions see http://www.qaa.ac.uk/Publications/InformationAndGuidance/Documents/contact_hours.pdf and http://www.hesa.ac.uk/component/option,com_studrec/task,show_file/Itemid,233/mnl,13061/href,Calculations_methods.html/#LearningandTeaching

viii The 'other' category should not be used for learning undertaken by full undergraduate students as 'other' is not used in KIS categories

ix The aims should express the purpose of the module.

x The intended learning outcomes should detail the knowledge, understanding and skills that students will be able to demonstrate on successful completion.

xi In some circumstances it may be necessary to have more than 5 intended learning outcomes. You will be asked to provide your rationale for this in discussion at the USP.

xii For example, if the assessment is an essay and the essay meets ILOs number 1-4 and 6-7, state 1-4,6-7

xiii If Method B is used for module mark calculation, indicate Yes to specify the assessment component(s) to be passed in order to pass the module

xiv Please specify component(s) for which ethical approval is required.

xv The "Indicative texts and/or learning materials/resources" box should include a maximum of five items for new modules. These should be formatted using the University's agreed referencing style for the subject area (usually APA Harvard System 6th). See http://www.salford.ac.uk/library/infolit/tool#referencing_tab for more information. The texts should normally be recent texts (i.e. within the last six years) unless they are a particularly "classic" text. For existing modules, the "Indicative texts and/or learning materials/resources" box should include a link for USP reviewers and readers to the comprehensive reading list at http://lasu.salford.ac.uk