

MODULE DESCRIPTOR

Guidelines for completion are available¹ as are Red Guides on developing a new module and Delivering a module².

1. Module Code	MSDE 324	2. Title of new module	Intermediate Engineering Design
3. Subject Division <i>where relevant</i>	Engineering		
4. Module level <i>4, 5, 6 etc.</i>	5	5. Module Tutor	Dong Young Jang
6. Credit points <i>10, 20,30 etc</i>	10	7. Year long or semester based	Semester
8. Type of module <i>eg standard, dissertation, work-based study</i> <i>A full list of module types is provided in the guidelines¹.</i>	Standard		
9. Location(s) of delivery <i>For collaborative delivery, please state name(s) of institution(s) with country and start month(s) for each. A full list is available on the SITS help file in eLP</i>	SeoulTech, Korea, September		

MODULE DESCRIPTIONS

10. Synopsis of module (SITS Module Descriptor Sequence 0001)
A brief overview of aims, learning outcomes, learning, teaching, assessment, & feedback methods, and rationale

This module provides the student with abilities to work in teams and to communicate effectively as design engineers. Topics included are general methodology how to design engineering systems, the teamwork, and communication skills that will serve students in their capstone design classes and engineering careers. Assessment is through projects and assignments. Mid-term and final reports and presentation as well as short reports and presentation during class hours are considered for the assessment.

11. Indicative reading list or other learning resources (SITS 0002)

1. Recommendations for purchase by students

N/A

2. Books

¹ <http://northumbria.ac.uk/sd/central/ar/qualitysupport/approval/forms/>

² <http://northumbria.ac.uk/sd/central/library/marcel/redguides/browse/?view=Standard>

1) *The Mechanical Design Process* by David G. Ullman (McGraw-Hill 2004)

2) *Product Design and Development* by Karl T. Ulrich and Steven D. Eppinger (McGraw-Hill 2008)

3) *Engineering Design Methods* by Nigel Cross (Wiley , 2008)

3. Journal Articles

N/A

4. Journals and Newspaper Titles

N/A

5. Databases and Websites

N/A

6. Any Other Resources

N/A

12. Outline syllabus (SITS 0003)

A list of module contents

Introduction of course

Mechanical design problems and process. Team formation. Memo writing. Writing in groups

Design process

Concept generation. Product design phase. Product generation

Design evaluation phase

Product evaluation. Cost analysis. Practice prototyping operation and robust design. How to apply patent and write memo to management

13. Aims of module (SITS 0004)

Broad statement of educational intent and overall purpose of module

This module aims to teach the teamwork and communication skills, to teach how to organize design process for new product, and to teach how to get information of patents and apply new patents.

14. Learning outcomes (SITS 0005)

State what expected to know and/or be able to do at end of module

The student will be able to :

1. Practice the principles of design and techniques to develop products and related manufacturing processes. (A5)
2. Plan and conduct an investigative or development project subject to technical, time and commercial constraints. (C1)
3. Design a component, system or process and demonstrate its feasibility through testing or simulation (C5)
4. Understand the importance of teamwork, leadership and negotiation skills. (D4)

15. Pre-requisite(s) (SITS 0006)

Any module which must already have been taken at a lower level, or any stipulated level of prior knowledge required

None

16. Co-requisite(s) (SITS 0007)

Modules at this level which must be taken with this module

None

17. Distance learning delivery (SITS 0008)

If the module is offered (wholly or in part) by distance learning, please give detail of delivery arrangements and the specific resources required e.g. materials, communication facilities, hardware, software etc.

None

18. Learning and teaching strategy (SITS Module Descriptor Sequence 0009)

This module will be delivered using a combination of lectures, set work and presentation, and independent individual learning.

19. Assessment and feedback strategy (SITS Module Descriptor Sequence 0010)

Please provide details of assessment (formative and summative) and indicate how students will be provided with feedback on their performance. (A breakdown of summative tasks is also provided in section 23.)

a. Summative assessment and rationale for tasks

A mid-term project report worth 30% is set to provide students with the opportunity to gauge their progress and reinforce their understanding of the design process up to concept design before moving on to higher level of design process.

The final project report worth 50% provides students with a range of design process after the concept design up to the product development and product support to test their ability to logically evaluate product and understand the manufacturing process.

Assignments and short presentations worth 20% are designed to understand practical design examples to cover each step of design process in the lectures. All the works will be given as group projects and students have to organize design groups at the early part of semester.

b. Formative assessment – detail of process and rationale

Scheme of the formative assessments on the reports, presentations and assignments of each design group will be provided to the students when students get assignments and projects for their evaluations. Verbal feedback during the presentations will be given to each design projects and each design group must consider the feedbacks for their final version of reports.

c. Indication of how students will get feedback and how this will support their learning

Feedback will be in the form of verbal (formative) during the presentations and summative feedback will be via written comments on the pre-reports before formal

reports.

20. Implications for Choice (SITS Module Descriptor Sequence 0011)

Possible follow-on modules, or exclusions, or modules which require this one as a pre-requisite

Pre-requisite for MSDE 422 Capstone Design I and MSDE 423 Capstone Design II

21. Notional Student Workload (NSW) for each mode of delivery

(SITS Module Descriptor Sequence 0012)

The total hours should be 100 for a 10 credit module, 200 for a 20 credit module etc. Note that time taken to undertake assessments should be included in any category where appropriate. Time in formal examinations or tests should be shown separately.

Mode of delivery (eg FT, PT, DL) <i>Please complete a separate column where the distribution of notional student workload differs for a particular delivery pattern</i>	FT			
Lectures	30			
Seminars	10			
Tutorials				
Laboratory/studio/practical work	10			
Directed learning	15			
Independent learning	30			
Placement/work experience learning/fieldwork				
Duration of examination(s)/test(s)				
Other (please give details of other hours indicated) :Formal Presentation	5			
Total workload <i>200 hours for 20 credit module, 100 for 10 credit module etc.)</i>	100			

SUMMATIVE ASSESSMENT

22. Form of Reassessment

Either synoptic or non-synoptic reassessment

	Y/N
Synoptic reassessment <i>One form of reassessment that tests all module learning outcomes</i>	100 Y
Non-synoptic reassessment <i>Where module referred overall, individual failed components of assessment are reassessed</i>	

23. Component Assessment

To be completed for each component of assessment

Sequence <i>001, 002 etc.</i>	Assessment type <i>indicate ONE of the following types: AO Attendance only CP Clinical Placement CW Coursework EXAM PRE Presentation</i>	Brief description of assessment <i>e.g. type/length of exam, type/word limit of coursework</i>	Weighting <i>% or Pass/Fail (for grade only components) Note: % weightings should add</i>	Final assessment Y/N

			<i>up to 100% for module overall</i>	
001	PRE	Mid-term formal presentation with report	30	
002	PRE	Final presentation report	50	Y
003	CW and PRE	Assignments and short presentation	20	

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24. Date of SLT Approval

25. Subject code
 This ensures that the correct area receives appropriate funding and should be completed in consultation with the School Registrar or nominee. Advice can also be sought from Financial Planning.

26. Module mark scheme assigned³

27.	Component mark scheme assigned³	
	<ul style="list-style-type: none"> • <i>For each component listed in section 23 indicate the mark scheme attached.</i> • <i>Note that for synoptic mark schemes (ie MOD1, MOD3 and M50SY only) an additional component should be entered for the reassessment with sequence 900 and assessment type SYN.</i> 	
	001	<input style="width: 90%; height: 15px;" type="text"/>
		<input style="width: 90%; height: 15px;" type="text"/>
		<input style="width: 90%; height: 15px;" type="text"/>

28.	Date of entry onto SITS	<input style="width: 80%; height: 30px;" type="text"/>
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³A list of marking schemes (module and component) can be accessed from <http://northumbria.ac.uk/sd/central/ar/qualitysupport/approval/forms/>