Course Outline

Semester 1, 2015

MANF3100

PRODUCT AND MANUFACTURING DESIGN

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you understand the lecture material, completing the set assignments, further reading about the course mate set 0 0ilhinet 0 0ilr rea8(s,)o(rth)7tthou

incorporates case studies and projects, even your own designs and plans, to apply these methodologies and become proficient at them.

Student learning outcomes

At the conclusion of the course it is expected that you will be able to:

1) Understand and apply systematic design principles including:
   Quality Function Deployment (QFD)
   VDI-2206 and 2221 Design Standards
   Axiomatic and robust design principles
   Value analysis and value engineering methods.
2) Analyze and characterize manufacturing transformation processes in terms of key technical and economic drivers and factors.
3) Integrate the knowledge gained in (1) and (2) to make appropriate product design as well as transformation process selection and specification decisions.
4) Be able to integrate this information and design intent into CAD/CAM systems.
5) Develop an engineering design or prototype into a design that can be effectively and efficiently manufactured to meet customer as well as OEM requirements.
6) Understand the principles of manufacturing economics as it applies to material transformation processes as well as assembly processes and to apply economic analysis to develop cost and production estimates for your design.
7) Understand the fundamentals and key technologies used in manufacturing measurement and how this is us( )]TJETome prof

Suggested approaches to learning in the course

Suggested approaches to learning in this course include:

Careful reading, discussion and understanding of the material presented in lectures.

Additional reading on and about the material presented in lectures to broaden the knowledge base.

Paying attention throughout the lectures/practica, and asking questions when anything is not understood.

Conscientiously working through assignments.

Learning of the lecture material in preparation for quizzes.

Student-centered and self-directed learning (expectations of the students)

This course involves six hours per week of face-to-face contact, and it is expected that you will put in, on average, an additional four hours per week of your own time. This time should be spent in revising lecture material and further reading, completing assignments, and revising and learning for the quizzes.

Expected learning outcomes; their association with the teaching strategies and with the suggested approaches to learning

The lectures are designed to teach you the underlying theory and key mehe th

5.

General

You are assessed by way of assignments, quizzes, and presentations. There is no end-of-semester examination. Quizzes involve both calculations and descriptive material.

Quizzes x 3	30%	(Graduate Attributes: 1, 2, 3 and 4)
Assignment Part I	30%	(Graduate Attributes: 1, 2, 3, 4, 7, 8, 13,14, 15, 17)
Assignment Part II	40%	(Graduate Attributes: 1, 2, 3, 4, 7, 8, 13,14, 15, 17)
Overall mark for course	**100%**	

The dates for the quizzes and assignments will be provided on Moodle as the course progresses. The assessments are designed to bolster your understanding of the material being presented and focus on the key learning points. The quizzes will test the understanding of the sections being presented while the assignments will allow you to apply the concepts learnt in the course.

Assignments

The assignments will be posted on Moodle and announcements will be made about due dates. Completed assignments will be handed in hard copy by the end of the week the assignment is due. The assignments support the learning outcomes by incorporating an appropriate mix of analysis techniques, design methodologies, fact based data analysis that support the design of appropriate solutions. The

Use of graphs, were appropriate, to support or illustrate the calculations
Use of tables, where appropriate, to support or shorten the calculations
Neatness

ACADEMIC HONESTY AND PLAGIARISM