

Environmental & Quality Aspects in Design and Manufacturing

Massimo Rudan & Gaetano D'Emma



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These slides will be made available in pdf format at the link entitled *Teaching Activity* of the website:

<http://www.micro.deis.unibo.it/cgi-bin/user?rudan>

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TO WHOM IS THIS COURSE ADDRESSED?



- ❑ In the Academic year 2009–2010 the Students attending the course belong to the second year of the MASSET program. They acquire 6 credits in the subject *Others - F type*.
- ❑ In the Academic year 2010–2011 the Students attending the course will belong to the second year of the MASSET program (they acquire 6 credits in the subject *Others - F type*), and to the second year of the ECST program (they acquire 6 out of 9 credits in the subject *Others - F type*).
- ❑ The course may be attended by Students different from the above who choose it on a case-by-case basis.

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AIMS OF THE COURSE



- ❑ Environmental and Quality Aspects are driven by Standards, Directives, Guidelines and Models. The main learning-outcome is to know and to understand the key concepts behind them.
- ❑ To provide the fundamentals of Quality Management, Environment Management, Business Excellence and Project Management.
- ❑ To illustrate these elements on issues from electronics industry.

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PREREQUISITES

- ❑ Basic understanding of problems facing society, industry and business management.
- ❑ Communication skills.
- ❑ Ability to work in an international context.

Last, but not least...

- ❑ Strong will to learn about
 - quality issues,
 - business excellence and
 - project management !



STRUCTURE



- ❑ This course is split into two modules.
- ❑ Business Excellence and Project Management (40h), handled by G. D'Emma, covers:
 - Quality, Environment and Business excellence,
 - Project management and
 - Impact of business excellence on projects.
- ❑ Design and Manufacturing Aspects (20h), handled by M. Rudan, covers:
 - Examples of applications of the above concepts to the manufacturing of integrated circuits.

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SCHEDULE



- ❑ The lessons in the agenda will be given in the period September 21 through December 18, 2009.
- ❑ The lessons will start on **Wednesday, October 21** and end on Thursday, December 17, 2009.
- ❑ Therefore there is no lesson on
 - September 24, 30,
 - October 1, 7, 8, 14, 15.
- ❑ The schedule is:
 - On Wednesdays 15–18 in classroom 5-2,
 - On Thursdays 12–15 in classroom TS-02.

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NOTES ON SCHEDULE



- ❑ Few hours will be added to the schedule in November and December. In any case the total number of hours will not exceed 60.
- ❑ The classrooms may be changed if necessary.
- ❑ The agenda may also be changed if necessary. Hours may be swapped with those of other teachers.

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EXAMS



- ❑ The exams are written.
- ❑ To register for the exam, it is necessary to use the electronic lists that will be made available on the website

<https://uniwex.unibo.it>

- ❑ The Students that have access to the e-lists are kindly asked to use this method only.
- ❑ The electronic lists will carry the indication of the meeting point for the examination scheduling.

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CONTENTS (I)



- Quality, environment and business excellence
 - Quality control
 - Total quality management systems
 - Quality management systems
 - Environmental management systems
 - Business excellence models
 - Quality and excellence measurements and value

- Project management
 - Project management framework
 - Project management processes
 - Project planning
 - Risk management

CONTENTS (II)

- ❑ Impact of business excellence on projects
 - Quality management in projects
 - Project management guideline
 - Project management methods and tools
 - Project performance measurements
 - Project manager competencies

- ❑ Impact of quality and environment management on design and manufacturing
 - Production management and planning
 - Environmental aspects in electronics industry
 - European directives in electronics industry



REFERENCES (I)

- ❑ ISO 9000 series – Quality management systems
- ❑ ISO 10006 – Quality Management Systems – Guidelines for Quality Management in Projects
- ❑ ISO 14000 series Environmental management systems
- ❑ ISO 19011 – Guidelines for quality and environmental management systems auditing.
- ❑ IEEE Computer Society – IEEE Std 1490™-2003 – Adoption of PMI Standard – A Guide to the Project Management Body of Knowledge.



REFERENCES (II)

- ❑ Documentation from the European Foundation for Quality Management EFQM, www.efqm.org.
- ❑ Documentation from the International Project Management Association, IPMA, P.O. Box 1167, 3860 BD Nijkerk, The Netherlands, www.ipma.ch.
- ❑ European directive 2002/96/CE, “Waste Electrical and Electronic Equipment”
- ❑ European directive 2002/95/CE “Restriction of Hazardous Substances”



REFERENCES (III)



- ❑ The references listed above are generic.
- ❑ Other references pertinent to specific topics will be given during the lessons.
- ❑ Standards and guidelines (from ISO, IEEE, etc.) are protected by copyrights. Copies cannot be given to the Students. Original texts can be bought on the correspondent websites.
- ❑ Directives are usually free of charge and available on the web.

CONTACT



- ❑ The official agenda for contacts is:
 - Wednesdays 14:00-15:00
 - Thursdays 14:00-15:00
- ❑ It is advisable to ask for an appointment during a class, by calling or by sending a message.
- ❑ Massimo Rudan
 - 051-20-93-016 (93-016 from internal phones)
 - mrudan@arces.unibo.it
- ❑ Gaetano D'Emma
 - 348-103-2122
 - demma@csbi.eu

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