

COMPUTATIONAL PROJECT IN CHEMICAL ENGINEERING

1.1. Identification

University:	Kungl Tekniska Högskolan (KTH), Stockholm, Sweden										
School:	School of Chemical, Science and Technology										
Course:	Computational Project in Chemical Engineering										
ECTS:	7.5										
Semester:	<i>Winter</i>					<i>Summer</i>				X	
Category	<i>Fundamental course</i>					<i>Specialisation course</i>				X	
Module	<i>MFI</i>		<i>MFII</i>		<i>MFIII</i>		<i>MSI</i>	X	<i>MSII</i>		<i>MSIII</i>
Teachers:	Pehr Björnbörn										
Language:	<i>English</i>	X	<i>Italian</i>		<i>Swedish</i>	X	<i>Spanish</i>				

1.2. Learning-outcomes

- knowledge to handle new problems in new areas using different computational instruments.

1.3. Competencies

▪ General

- to have critical understanding of technical and scientific tools
- to work and manage teams
- communication skills (both written and oral)
- to work in an international context

▪ Specific

- to find, adopt and apply the necessary information in a suitable manner
- to acquire the self confidence needed to handle complicated problems and take the responsibility to deliver reasonable results
- to improved the ability to work in groups, and in oral and written communication

1.4. Contents

Chemical Engineering computations: Chemical Modeling, Chemical Engineering profiles. Problem definition, formulation of the problem in mathematical terms. Numerical procedures and computer software.

1.5. Teaching Methodology

- Lecture sessions
- Practical sessions: “cooperative work” for solving problems
- Seminar

1.6. Evaluation

- written exams
- oral evaluation of the problems solved by “cooperative work”

1.7. Bibliography

- Molecular modeling techniques in material sciences. Jèorg-Rèudiger Hill, Lalitha Subramanian, Amitesh Maiti. Taylor & Francis, 2005
- Projects in science computation. Richard E.Crandall. Springer, 1994