

/ INTERNATIONAL POST-MASTER'S SPECIALISATION DIPLOMA /

The MDE Diploma

Model Driven Engineering for Software Management

AWARDED BY THE FRENCH MINISTRY OF INDUSTRY



ECOLE DES MINES DE NANTES
FRANCE

The MDE Diploma

A Comprehensive Course on Advanced Software Production, Operation, and Maintenance based on Model Driven Engineering.

The MDE International post-master's specialisation Diploma in Model Driven Engineering (MDE) for Software Management offered by Ecole des Mines de Nantes trains engineers to manage complex projects in various IT fields with the latest cutting-edge modeling technologies.

/ MDE CHALLENGES /

Model Driven Engineering (MDE) is changing the way we build, we operate, and we maintain our software-intensive systems. Software models are being increasingly used in most areas of computer science. They allow working at a higher abstraction level and generating the executable programming code only at final implementation stages. MDE provides a new conceptual framework and a set of tools to separate and to combine the multiple aspects and views present in modern complex systems. Several projects using MDE practices are reporting significant improvements in quality and performance. But the technical and human skills necessary to handle these projects are currently not widely available. This diploma intends to contribute filling this gap.

/ JOBS FOR TOMORROW AND THE FUTURE /

- The MDE Diploma provides the opportunity to develop specialist in Model Engineering, a key growth area in the information and communication technologies in a number of industries like bank and financial companies, government agencies, software houses, software editors, public and private research labs.
- The MDE curriculum has a close relationship with the real world through strong partnerships with industry. Students who excel in the Diploma will be offered design, development, or research project opportunities with industry partners. Examples of potential career opportunities in these companies are: software engineers with specialized expertise in model engineering, research and development engineers in national or international projects, enterprise architects, software configuration managers, requirements analysts, team leaders in new technology projects, development managers involved in information system modernization and migration

/ THE MDE PROGRAM (ASSUMING PRIOR RUNNING KNOWLEDGE OF THE JAVA PROGRAMMING LANGUAGE) /

Module 1: Prerequisites (60h)

- Free and Open Source Models for Software Development
- Practical Software Development with Eclipse
- Software Modeling including OMG MDA standards (UML, OCL, etc.)

Module 2: Fundamentals (120h)

- Fundamentals of Metamodeling and Domain Modeling
- Theory and Practice of Model Transformation
- Advanced Model Management: repositories & collaborative development
- Basic Model Driven Software Development

Module 3: Applications of MDE (120h)

- Information Systems
- Embedded Systems
- Data Engineering
- Web Engineering
- Process Engineering
- System Engineering
- Graphical User Interfaces
- Legacy Reverse Engineering and Cartography of Information Systems

Module 4: Management (60h)

- MDE Management Projects
- Change Organizational Process in MDE
- Alignment of Business Needs with Technical Platforms
- Strategies for Information System Evolution and Modernization

Module 5: Internship (6 months)

- A co-op stay in a company or in a lab to work on a MDE project

/ A STIMULATING CONTEXT /

One semester of academic coursework (360 hours) at the Ecole des Mines de Nantes (in constant relation with the EMN researchers) combined with seminars, regular visits to successful MDE deployment sites, and group projects. A 6-month internship with a key player in the field (company or lab) to solve industrial issue with MDE solutions.

/ STUDENT PROFILE /

The international MDE program is open to candidates with at least a scientific Master degree or equivalent with industrial experience in computer science. Candidates must have a minimum level in English.

/ AN IDEAL STUDY ENVIRONMENT /

- Nantes is the 6th town in France and has been quoted as "the most liveable city in all of Europe" (TIME Magazine, 22 august 2004). It is only two hours from Paris by TGV and located 50km from the Atlantic coast. Wide variety of cultural activities.
- Modern campus with spacious teaching and research facilities, accommodation, restaurant and cafeteria.
- The area of Nantes is well known for its eagerness in fostering innovation in software engineering and particularly in model driven engineering. Several companies have pioneer record in the area of reverse engineering of legacy systems, software modernization, management of information systems in the banking industry and electronic government services. Nantes is also home to internationally visible small techno-providers. The area hosts a rich and dynamic ecosystem of IT ventures, including important groups in the bank and insurance industry. MDE will expose students to this exciting environment.

/ TEACHING TEAM /

The courses and projects are run by a team faculty from the Ecole des Mines de Nantes and internationally recognized experts in the field under the supervision of Pr. Jean Bézivin, lead of a joint research team between INRIA (the French institute in computer science) and the Ecole des Mines de Nantes.

/ PRACTICAL INFORMATION /

| | |
|---------------------------------|---|
| Start of program: | February |
| Location: | Ecole des Mines de Nantes, France |
| Duration: | 11 months |
| Credit: | 60 ECTS |
| Degree: | Post-master's specialization diploma in Computer Science |
| Tuition fees: | 12 000 € |
| Rate of Studies: | Full time with visits to applications sites |
| Language of Instruction: | English |
| Financial aid: | Scholarships available for direct registration, from European bodies, for students from our international university partners, for academics excellence. Various possible public and industrial sponsorships. |

/ APPLICATIONS /

Application forms and information on the program are available from <http://www.mines-nantes.fr>

Deadline for applications: end of November

Contact for candidates: mde-admission@emn.fr

Contact for companies: mde-industry@emn.fr

