Fiat Cooperation Agreement with Politecnico di Torino, and Chrysler with Windsor University
From Industry needs to effective Cooperation with Universities

- Industry Needs
  - More flexibility in education to cope with the evolution of OEM needs – VEP programs, Industry lecturers
  - More training on actual tools and standards adopted by Industries – Virtual and integrated approaches
  - Better understanding of jobs and roles required by Industries - through role oriented workshops
  - Joint research matching open approaches with IP and confidentiality agreements – well defined boundaries and conditions
  - Internationalization of Education Courses and research - share best practices, provide intercultural environment and equal opportunities
Infrastructures and other requirements

- Courses international recognition – certification
- Selected University networks at national and international level
- Campus open to industry lecturers and specialists - labs
- IT distributed environment to effectively support all University-Industry activities and cooperative working (PLM),
- Access to students and professors of high cost / sophisticated industrial infrastructures
- Selected labs dedicated to upcoming technologies
- Start-up companies in the Campus to encourage and sustain next industry steps – technology transfer

High level Governance of the Industry-University Cooperation.
The new Mirafiori buildings of the Mobility and Design Centers
PLM@POLI: Integrated vision
Governance of the Agreement Fiat – Politecnico

Legenda
Fiat  PoliTO

Steering Committee

Executive Committee

Executive Committee Program Office

Committee for education
Committee for research
Committee for students competition activities
Committee for promotion and communication
Innovation is based both on Research and Education. Cooperation between University and Industry should address both Education and Research.

Education:
- New skills, roles and professions
- Managing international & interdisciplinary collaborations

Research:
- Shared vision
- Problem driven research
- Network of knowledge

New opportunities for and from the territory
Cooperation on Education & Training

International Masters Degree in Automotive Engineering

To establish a program aimed at providing students from the University of Windsor and students from Politecnico di Torino with suitable training and education which will allow them to enter into the professional world owning a full and international background.
Joint Research and Thesis Program

To support the development of competencies at both Universities of actual and upcoming interest for Chrysler and Fiat. Based on research projects defined by Fiat and Chrysler, including stages and team work with industry experts, professors and students from Politecnico di Torino and University of Windsor. Improved sharing of knowledge and results by exchange of students and professors.
Joint Master Degree in Automotive Engineering at Politecnico di Torino and Windsor University

The agreement focuses on selective priorities:

- Joint Master degree awarded by Politecnico and Windsor University.
- Industrial research program, sponsored by Fiat and Chrysler at the two Universities, as driver for Master and PhD theses.
- Additional 4-5 teaching modules added to Torino Master course, to provide complementary and voluntary education - on selected priority topics - for best selected students. Additional modules may be shared or integrated with similar ones from Windsor Univ. /Chrysler

This Agreement has the duration of 4 academic years (2010-2014) and its continuation is subject to a renewal in 2014.
The educational model

- **Bachelor degree**
- **Specializing Master**
- **Master of science degree**
- **Specializing Master**
- **2nd level**
- **PhD**
- **Business and Professional Opportunities**

Average student age:
- 22 years
- 24 years
- 27 years

Years of higher education:
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
Joint Master Degree in Automotive Engineering

Politecnico di Torino

Bachelor Degree

1 2 3

Windsor University

Master Degree

1 2

Years

50 50

20 20
New curricula for the second level (MS) degree
The first year is specific for the automotive engineering course

<table>
<thead>
<tr>
<th>1° anno</th>
<th>Codice</th>
<th>Lingua</th>
<th>Insegnamento</th>
<th>Crediti</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>04LSLLO</td>
<td>🇮🇹</td>
<td>Automatic controls</td>
<td>8</td>
</tr>
<tr>
<td>1</td>
<td>02MRPLO</td>
<td>🇮🇹</td>
<td>Numerical Modelling and simulation</td>
<td>10</td>
</tr>
<tr>
<td>1</td>
<td>01OFHLO</td>
<td>🇮🇹</td>
<td>Product quality design</td>
<td>6</td>
</tr>
<tr>
<td>1</td>
<td>01OFILO</td>
<td>🇮🇹</td>
<td>Strategic marketing and products planning</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td>01OFGLO</td>
<td>🇮🇹</td>
<td>Car body design and aerodynamics</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>01NIALO</td>
<td>🇮🇹</td>
<td>Combustion engines and their application to vehicle</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>02MRFLO</td>
<td>🇮🇹</td>
<td>Electric and electronic systems in vehicles</td>
<td>10</td>
</tr>
</tbody>
</table>

The second year is specific for the automotive engineering course and is organised in three branch
### Development of the propulsion system

<table>
<thead>
<tr>
<th>Periodo</th>
<th>Codice</th>
<th>Insegnamento</th>
<th>Crediti</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>01NICLO</td>
<td>Design of the engine and its control system</td>
<td>8</td>
</tr>
<tr>
<td>1</td>
<td>01OFJLO</td>
<td>Engine emissions control/Electric and hybrid propulsion systems</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Engine emissions control</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Electric and hybrid propulsion systems</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>01NIBLO</td>
<td>Powertrain components design</td>
<td>10</td>
</tr>
</tbody>
</table>

### Development of the vehicle system

<table>
<thead>
<tr>
<th>Periodo</th>
<th>Codice</th>
<th>Insegnamento</th>
<th>Crediti</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>01NIFLO</td>
<td>Automotive infosystems</td>
<td>6</td>
</tr>
<tr>
<td>1</td>
<td>01NIELO</td>
<td>Body and interiors components design</td>
<td>12</td>
</tr>
<tr>
<td>1</td>
<td>02MSGLO</td>
<td>Chassis design</td>
<td>10</td>
</tr>
</tbody>
</table>

### Management of the industrial process

<table>
<thead>
<tr>
<th>Periodo</th>
<th>Codice</th>
<th>Insegnamento</th>
<th>Crediti</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>02MSNLO</td>
<td>Commercialization and related services</td>
<td>6</td>
</tr>
<tr>
<td>1</td>
<td>03MDZLO</td>
<td>Ergonomics for Manufacturing Systems</td>
<td>6</td>
</tr>
<tr>
<td>1</td>
<td>01NIGLO</td>
<td>Plants and manufacturing systems</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>01OFQLO</td>
<td>Project management and cost/value analysis</td>
<td>6</td>
</tr>
</tbody>
</table>
Joint Master Degree

- Total education streams increased (at least 3 for each university (powertrain, body & chassis, manufacturing processes and management, simulation and virtual engineering).
- During 1\textsuperscript{st} year of Master, alignment of students competences at both universities
- In 2\textsuperscript{nd} year exchange of best students. Selection based on curriculum and motivation
- max. 20 students from each university involved in the exchange program.
- Final thesis will be developed on the basis of industrial projects promoted by Fiat and Chrysler.
- Students, not involved in the double degree program, will continue with the standard master degree in their original university.
Joint Master Degree aims to promote synergy between the two Institutions and their Industrial partners as well as to provide high level courses, by means of students exchange, applied industrial research projects and common use of labs and education facilities.
INDUSTRIAL PROJECTS

- Industrial Research projects on which Master thesis will focus, will be identified by Fiat/Chrysler. These projects will not substitute, but will be synergic with other research programs promoted by Fiat/Chrysler business units with Universities.

- First group of topics have been identified and shared in academic year 2010/11; Thesis Plan will identify step objectives for thesis and goals for Universities.

- The industrial research program will be governed through specific Joint Governance Committees (two) formed by Fiat and Poli-To and by Chrysler and Windsor University, exchanging achievements and approaches.
THANK YOU

FOR YOUR ATTENTION
Priority research areas

- Ecologic and High Efficiency Propulsions
- Systems and Technologies for Vehicle Efficiency Improvement
- Innovative Vehicle Architectures and System Integration
- WCM, Sustainable and High Performance Manufacturing
- Vehicle – Infrastructure Integration