JIM2L Status Update

Dr. Tarek A. Tutunji, PU
Dr. Nathir Rawashdeh, GJU

TEMPUS - JIM2L
Steering Committee Meeting
Amman, Jordan
June 21-23, 2012
WPI: Curricula Studies

- University name
- Country
- Department that offers the program
- Name of the program
- Website
- Program mission, vision, and objectives
- Pre-requisites for the program
- Program requirements (which include compulsory courses, elective courses, and thesis)
- Laboratories
- Research tracks
- Industry cooperation
WP1 Curricula Studies / USA

1. Lawrence Tech University – Michigan
2. Stanford – California
3. San Jose State University – California
   - University of California at Berkley – California
   - Cal Poly – California
   - University of Michigan – Michigan
   - Rensselaer Polytechnic Institute – NY
   - University of Virginia – Virginia
   - University of Washington – Washington
WPI Curricula Studies / Canada

1. Simon Fraser University
2. University of Alberta
3. McMaster University
   - University of British Columbia
1. Hochshule Bochum – Germany
2. Silesian University PolyTech – Poland
3. Hamburg University of Technology – Germany
4. FH Aachen (University of Applied Sciences) – Germany
5. Management Center Innsbuck – Austria
6. Hochschule Karlsruhe – Technik und Wirtschaft – Germany

- Tampere University of technology – Finland / Netherland
- University of Twente – Netherland
- Chalmers University of Technology – Sweden
- Vrije University Brussel – Belgium
The graph shows the distribution of compulsory, electives, and thesis courses across different years:

- **Compulsory Courses** are represented by blue bars.
- **Electives** are represented by orange bars.
- **Thesis** are represented by red bars.

The graph indicates a significant rise in compulsory courses in year 5, with a corresponding decrease in electives and thesis courses. The distribution is as follows:

- **Year 1**: Compulsory courses are moderate, electives are lower, and thesis is minimal.
- **Year 2**: Compulsory courses increase, electives are stable, and thesis is low.
- **Year 3**: Compulsory courses stabilize, electives rise, and thesis remains low.
- **Year 4**: Compulsory courses decrease, electives are high, and thesis remains minimal.
- **Year 5**: Compulsory courses peak, electives decline, and thesis is low.
- **Year 6**: Compulsory courses decline, electives are moderate, and thesis is low.

The graph visually supports the trend of a concentrated focus on compulsory courses in year 5, followed by a diversification in subsequent years.
WPI Curricula Studies / UK

1. London South Bank
2. Kingston University London
3. De Montfort University Leicester
4. Newcastle University
5. Southampton University
6. University of Bath

- University of Glasgow
- University of Strathclyde
- Lancaster University
WPI Curricula Studies / Asia

1. National Taiwan University – Taiwan
2. National University of Singapore – Singapore
3. Jordan University of Science and Technology – Jordan
4. Palestine Polytechnic University – Palestine
5. American University in Sarja – UAE
6. Sabanci University – Turkey

- Tokyo Metropolitan University – Japan
- Gwangju Institute of Science & Technology – Korea
- Harbin Engineering University - China
Distribution Among Field Areas
Distribution percentages among the main fields

Control / Informatics

Mechatronic Systems

Other

Mechanical

Electrical
Distribution percentages: Control/Informatics Field

- Control Theory: 45.0%
- Informatics and Embedded Systems: 40.0%
- Automation And PLC: 10.0%
- Artificial Intelligence: 5.0%
Distribution percentages: Mechatronics Systems Field

- Mechatronic System Design: 50.0%
- Robotics: 20.0%
- Industrial Applications: 10.0%
- Modeling and Simulation: 10.0%
# PU Suggested Program

One: Six Compulsory Courses (18 US Credit Hours)

<table>
<thead>
<tr>
<th>Course Title</th>
<th>US Cr.Hr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechatronic and Automation Systems</td>
<td>3</td>
</tr>
<tr>
<td>Instrumentation and Drive Systems</td>
<td>3</td>
</tr>
<tr>
<td>Modeling and Identification of Dynamic Systems</td>
<td>3</td>
</tr>
<tr>
<td>Advanced Control Theory</td>
<td>3</td>
</tr>
<tr>
<td>Real-Time Embedded Systems</td>
<td>3</td>
</tr>
<tr>
<td>Industrial Project Management</td>
<td>3</td>
</tr>
</tbody>
</table>

Two: Elective Courses (9 US Credit Hours: Choose three of the following)

<table>
<thead>
<tr>
<th>Course Title</th>
<th>US Cr.Hr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced Manufacturing Systems</td>
<td>3</td>
</tr>
<tr>
<td>System Integration</td>
<td>3</td>
</tr>
<tr>
<td>Mechatronic Systems Design</td>
<td>3</td>
</tr>
<tr>
<td>Advanced Process Control</td>
<td>3</td>
</tr>
<tr>
<td>Advanced Engineering Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>Advanced PLC</td>
<td>3</td>
</tr>
<tr>
<td>Intelligent Control Systems</td>
<td>3</td>
</tr>
</tbody>
</table>

Three: Thesis (9 US Credit Hours)
WP5: University-Industry Links

- Jordan Mechatronics Network
- Jordan Mechatronics Society
- Industrial Survey