EMREX
- the user-centered solution for electronic transfer of student data

Tor Fridell
What is EMREX?

A system where a student can fetch assessment data from a host university after exchange studies and bring it back electronically to the home university.

- Transcript of records
- Diploma Supplement information

User driven, student centered
How EMREX works

Home country HEI SIS

Student Mobility Plug-in (SMP)

Auth.

Country A

National Contact Point (NCP)

Host Country Result Service

Auth.

Country B

ELMO (XML)

HEI SIS

Oodi

Oodi

Oodi

Auth.

ELMO (XML)

Home country HEI SIS

Student Mobility Plug-in (SMP)

Auth.

Country A

National Contact Point (NCP)

Host Country Result Service

Auth.

Country B

ELMO (XML)

HEI SIS

Oodi

Oodi

Oodi

Auth.
Welcome to EMREX!

This service will enable you to import your awarded credits from other higher education institutions abroad connected to EMREX. Importing your records is a quick and easy process.

1. Select the country from which you want to retrieve your credits from.

2. Use the credentials from the host university where you studied to log into the system where your credits are stored.

3. Select the credits you want to import.

4. Review and confirm the selection. The records will be sent to your home university and you may save a copy in PDF format.

5. When the import is finished, please answer a few questions about the service to help us develop EMREX further.

So let's get started by selecting a country!

Choose Your Exchange Country:

- Croatia
- Denmark
- Finland
- Italy
- Netherlands
- Norway
- Poland
- Sweden
# Select courses to import

## Filter course list

<table>
<thead>
<tr>
<th>Higher Education Institution</th>
<th>Level</th>
<th>Time period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linköping University</td>
<td>Bachelor</td>
<td></td>
</tr>
</tbody>
</table>

**Filter parameters**

- From: yyyy-MM-dd
- To: yyyy-MM-dd

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### Computer Science and Engineering - 270 credits | TDDDA | Linköping university

<table>
<thead>
<tr>
<th>Title</th>
<th>Credits</th>
<th>Code</th>
<th>Grade</th>
<th>Date</th>
</tr>
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<tbody>
<tr>
<td>Introductory Physics</td>
<td>5.0</td>
<td>TFFY06</td>
<td>4</td>
<td>1983-10-24</td>
</tr>
<tr>
<td>Introduction to Computer Science</td>
<td>7.5</td>
<td>TDDA01</td>
<td>5</td>
<td>1984-02-08</td>
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<tr>
<td>Physical Laboratory Work, introductory course</td>
<td>4.5</td>
<td>TFFM05</td>
<td>G</td>
<td>1984-03-27</td>
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<tr>
<td>Basic Electronics</td>
<td>5.0</td>
<td>TSDT61</td>
<td>3</td>
<td>1984-04-07</td>
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<tr>
<td>Switching Theory and Logical Design</td>
<td>7.0</td>
<td>TSEA05</td>
<td>3</td>
<td>1984-05-23</td>
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<tr>
<td>Programming and Program Development Project in Pascal</td>
<td>7.5</td>
<td>TDDA52</td>
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<td>1984-07-02</td>
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<tr>
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<td>6.0</td>
<td>TDDA62</td>
<td>4</td>
<td>1984-10-23</td>
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<tr>
<td>Digital Project Laboratory</td>
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<td>TSEA31</td>
<td>G</td>
<td>1985-03-01</td>
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<tr>
<td>Numerical Algorithms</td>
<td>5.0</td>
<td>TANA42</td>
<td>4</td>
<td>1985-04-17</td>
</tr>
<tr>
<td>Electrical Measurements, basic course</td>
<td>3.0</td>
<td>TFMA06</td>
<td>G</td>
<td>1985-05-30</td>
</tr>
<tr>
<td>Computer Hardware and Architecture</td>
<td>7.0</td>
<td>TSEA15</td>
<td>3</td>
<td>1985-05-31</td>
</tr>
</tbody>
</table>
Transcript for Tor Fridell (1961-06-16)

Institution: Linköping University

Module: Computer Science and Engineering I TDDDA

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Level</th>
<th>Type</th>
<th>Credits</th>
<th>Result</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>TFFY06</td>
<td>Introductory Physics</td>
<td>Bachelor</td>
<td>Course</td>
<td>5.0</td>
<td>4</td>
<td>1983-10-24</td>
</tr>
<tr>
<td>TEN1</td>
<td>Examination</td>
<td>Bachelor</td>
<td>Class</td>
<td>4</td>
<td></td>
<td>1983-10-24</td>
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</table>

Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Level</th>
<th>Type</th>
<th>Credits</th>
<th>Result</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>TGTU30</td>
<td>Environmental Technology</td>
<td>Bachelor</td>
<td>Course</td>
<td>4.0</td>
<td>G</td>
<td>1989-03-17</td>
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<tr>
<td>LAB1</td>
<td>Laboratory</td>
<td>Bachelor</td>
<td>Class</td>
<td>G</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TEN1</td>
<td>Examination</td>
<td>Bachelor</td>
<td>Class</td>
<td>G</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TFFY47</td>
<td>Engineering Mechanics D</td>
<td>Bachelor</td>
<td>Course</td>
<td>4.5</td>
<td>3</td>
<td>1991-08-23</td>
</tr>
<tr>
<td>TEN1</td>
<td>Examination</td>
<td>Bachelor</td>
<td>Class</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>716G18</td>
<td>Horror Fiction</td>
<td>Bachelor</td>
<td>Course</td>
<td>7.5</td>
<td>G</td>
<td>2011-11-04</td>
</tr>
<tr>
<td>EXAM</td>
<td>Examination</td>
<td>Bachelor</td>
<td>Class</td>
<td>G</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Background

- EU Erasmus+ project (2015-2017)
- DK, FI, NO, IT, PL, SE
- Secure and fast electronic transfer of achievement results
- **User-driven** approach to (my) data management (GDPR)
- **Building block**: uses local infrastructure, integration into other services and processes
- Standard data format for automation (ELMO)
The EMREX project ended in 31 December 2017.

The project delivered what it promised: the solution was piloted and was put in production.

The experiences from the field trial showed that the technical solution is easy to use, adaptable to different national contexts, and greatly appreciated by the students.
Our vision

- Enabling digitalization of any process in need of assessment data - before, during and after studies
- Goes beyond Erasmus+ mobility
  - student mobility programs
  - joint degrees, double degrees
  - admission services
  - recruitment solutions
  - credential evaluation
  - All countries in the world
EMREX User Group consists of

– full-members, meaning organizations responsible for one or more NCPs.
– associated members, meaning parties interested in EMREX, either through having an SMP or considering building an NCP or SMP.

Executive Committee elected with representatives from Finland, the Netherlands, Norway, Poland and Sweden
Statistics 2018, first year in production

Usage measured from NCP

<table>
<thead>
<tr>
<th></th>
<th>CR</th>
<th>DK</th>
<th>FI</th>
<th>IT</th>
<th>NL</th>
<th>NO</th>
<th>PL</th>
<th>SE</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of connections</td>
<td>196</td>
<td>0</td>
<td>116</td>
<td>9</td>
<td>21</td>
<td>18115</td>
<td>119</td>
<td>357</td>
<td>18737</td>
</tr>
<tr>
<td>Number of Successful data transfers</td>
<td>196</td>
<td>0</td>
<td>54</td>
<td>0</td>
<td>0</td>
<td>14273*</td>
<td>119</td>
<td>312</td>
<td>14758</td>
</tr>
<tr>
<td>Number of errors</td>
<td>0</td>
<td>0</td>
<td>62</td>
<td>9</td>
<td>21</td>
<td>3842**</td>
<td>0</td>
<td>45</td>
<td>3979</td>
</tr>
</tbody>
</table>

*Majority from recruitment systems
** Cancelled by user

Reasons for errors:
- Students picking their own university instead of partner university
- Missing code made transcript misinterpreted
- NCP bug when course with zero credits
- Insufficient ID information
Usage measured from NCP

Example: Calls to Swedish NCP

<table>
<thead>
<tr>
<th>Website</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>emrex.its.umu.se/smp/onReturn</td>
<td>21</td>
</tr>
<tr>
<td>emrex01.csc.fi/smp/onReturn</td>
<td>7</td>
</tr>
<tr>
<td>fsweb.no/soknadsweb/ncpdata</td>
<td>71</td>
</tr>
<tr>
<td>fsweb.no/studentweb/ncpdata</td>
<td>201</td>
</tr>
<tr>
<td>studentweb.uio.no/studentweb/ncpdata</td>
<td>54</td>
</tr>
<tr>
<td>usosweb.amu.edu.pl/kontroler.php?_action=dla_stud/studia/oceny/emrex/importujElmo</td>
<td>1</td>
</tr>
<tr>
<td>usosweb.umk.pl/kontroler.php?_action=dla_stud/studia/oceny/emrex/importujElmo</td>
<td>1</td>
</tr>
<tr>
<td>usosweb.uw.edu.pl/kontroler.php?_action=dla_stud/studia/oceny/emrex/importujElmo</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>357</td>
</tr>
</tbody>
</table>
Status per country
Croatia

- NCP in production since August 2018
- HEIs choose to join on a voluntary basis
  - 5 of 8 major universities have joined
  - 9 colleges
- ELMO 1.3
- authentication through Croatian eIDAS node
- SMP planned for central admissions
Denmark

- Stable NCP has been in production during 2017 but technical issues stopped it in 2018.
- Student Information Systems about to be replaced
- No current plans for EMREX Client
Finland

- NCP covers all HEIs (national data warehouse, powered by CSC)
- EMREX SMP used by 2 HEIs actively, others sporadically
- Learning opportunity data will be available more comprehensively in following years
- HEI’s are in the middle of a large-scale student system migration
Italy

- NCP in operation for 2 HEIs and used by both of them
- SMP operational but not used
- Plans to include more HEIs, but the issue to allow students to filter results is still there...
The Netherlands

- EMREX National Contact Point
  - ELMO 1.2
  - EMREX Client
Norway

- All universities and colleges connected.
- ELMO 1.3.
- Prepare for use of eID (eIDAS).
- Extended use of EMREX in recruitment systems.
- New projects to automate processes based on data from EMREX.
- Concrete plans to connect vocational higher education, upper secondary schools and Enic-Naric (results of recognition from Nokut)
- SMPs in public and private sector
8 Polish public universities currently registered.
Both SMP and NCP in the same system (USOSweb).
Possible users: over 60 HEIs from consortium MUCI.
Plans to add SMP to the central admission system for the internal mobility program.
Plans to connect to login.gov.pl (eID node).
Sweden

- One SIS, Ladok, run by a consortium covers 37 HEI:s in Sweden, which is practically all
- NCP in operation for all 37 HEI:s
- SMP as standalone in operation, covers the same area
- Secure transfer of pdf to staff within SIS
What’s in the future

Extending the network
  – Ongoing: China (NCP), Germany (NCP), Belgium (SMP & NCP)

ELMO enhancements
  – Diploma Supplement (1.4)
  – Results of recognition
  – Student information
  – Other issues

Collaboration; EU-initiatives, GDN
More info

Main website:
http://www.emrex.eu

ELMO standard
https://github.com/emrex-eu/elmo-schemas/releases
Vision statement –
(empty phrase competition)

“To act as a global platform for connecting expertise, sharing knowledge and enhancing collaboration to expand EMREX footprint and help unlock the full potential of student data and open up data flows globally”.