

# GSE Management Summit Berlin, Germany



## IBM System z Academic Initiative Enabling Schools Assisting Clients

**Kathy Pfeiffer**

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# Session Agenda

- **IBM Academic Initiative, System z program**  
Ms. Kathy Pfeiffer, Academic Initiative Program Manager
- **System z Mainframe Education Activities at Bochum University of Applied Sciences**  
Professor Dr. –Ing Carsten Koehn, Dean, Department of Electrical Engineering and Computer Sciences
- **Academic Roundtable**  
Mr. Peter Groth, European Strategic Project Manager, GUIDE SHARE EUROPE

# IBM Academic Initiative



Products & technologies
→ Power™ Systems 
→ System z™
<b>Information Management</b>
<b>Lotus</b> software
<b>Rational</b> software
<b>Tivoli</b> software
<b>WebSphere</b> software

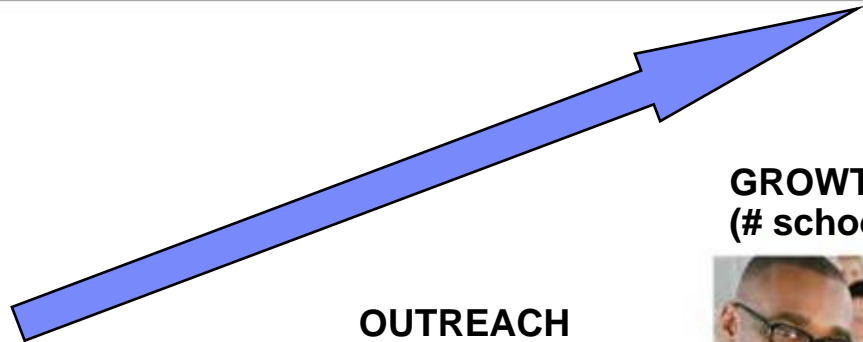
Membership in the IBM Academic Initiative is free and open to individual faculty members.

## System z Mission: Assist clients world wide with z skills

- ✓ Influences and assists educators world wide to teach mainframe technologies and concepts
- ✓ Builds important relationships with professors, customers, and partners
- ✓ Demonstrates IBM's commitment and continued investment in the mainframe

# System z Academic Initiatives

7 Years of investment, outreach, & growth = 2010 Student Hiring



**Program INVESTMENT Continues**

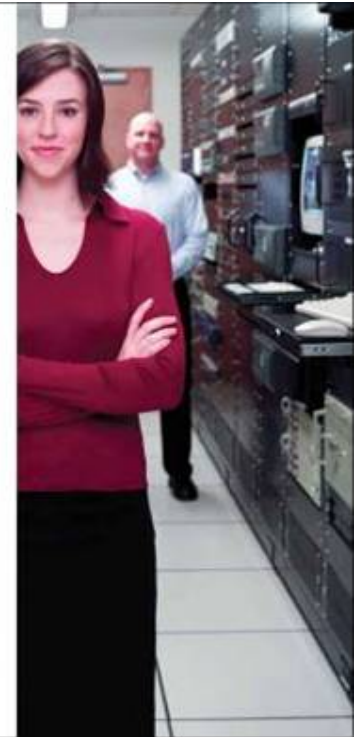
**OUTREACH (community)**




**GROWTH (# schools)**



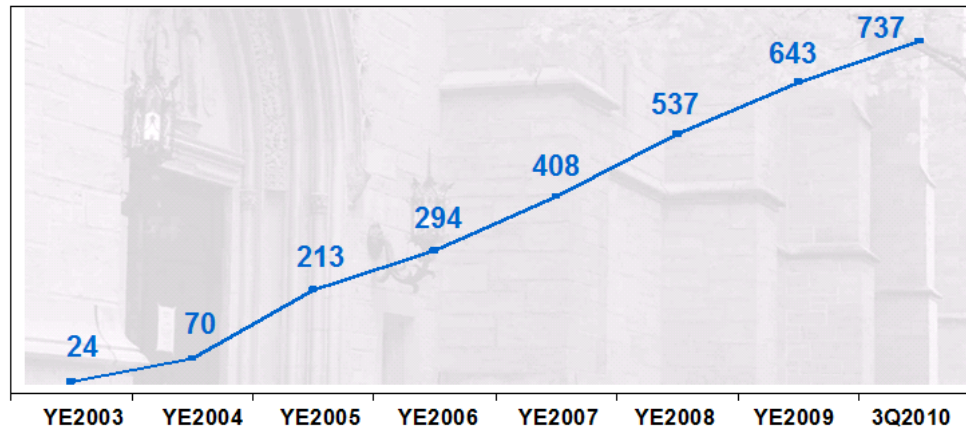
**CONNECTIONS (academia/industry)**



# How can IBM help clients with Skills?

- ✓ Where to recruit students learning System z
  - ✓ Provide contacts and introductions
  - ✓ Partner with you at additional schools
- 
- ✓ Provide resources and suggestions to build skills within the business
  - ✓ Share examples of what others are doing

# Member schools worldwide in System z Academic Initiative



- **737 Participating Member Schools** – >reaching students in 61 countries
- **Participation continues to increase** - +20% in 2009
  - 45% North America
  - 24% Europe, Middle East, and Africa
  - 16% Latin America
  - 15% Asia/Pacific
- **Wide variety of schools in the program** - *Different level of participation*
- **All programs are unique** - Designed to provide flexibility to the school to meet their requirements

# Schools worldwide teaching System z

[ibm.com/university/systemz](http://ibm.com/university/systemz) – Click on 'Participating Schools' tab

*Educators from all over the world are currently investigating or actively teaching mainframe technologies*

## United States

Alabama	Missouri
Arizona	Montana
Arkansas	Nebraska
California	New Jersey
Colorado	New York
Delaware	North Carolina
Georgia	Ohio
Illinois	Pennsylvania
Indiana	South Dakota
Maryland	Texas
Michigan	West Virginia
Minnesota	Wisconsin

## Canada

Ontario  
Quebec

## Europe, the Middle East and Africa

Austria	Netherlands
Belgium	Norway
Czech Republic	Portugal
Denmark	Poland
Egypt	Russia
Finland	Slovakia
France	South Africa
Germany	Spain
Ireland	Sweden
Italy	Turkey
Latvia	United Kingdom
Lithuania	

## Asia Pacific

Australia  
China  
India  
Malaysia  
Philippines  
Singapore  
Taiwan  
Thailand

## Latin America

Argentina	Peru
Brazil	Venezuela
Mexico	

# Academic Initiative offerings

- Access to IBM hardware and software
- Course materials and textbooks
- Ongoing Faculty skills development
- Certification and Mastery offerings and discounts
- Curriculum advisory
- Roundtable events
- Student Opportunity System
- Tutorials, articles and Redbooks
- Forums, technical webcasts, forums and newsletters
- Contests
- Student portal
- IBM Ambassador community
- zSkills Help Desk



# System z Academic Initiatives – Assist and Enable educators, clients, and community



Access to mainframes worldwide for teaching (no fee)



45 Courses, z/OS Mastery Exams, Coupons, Professor Seminars, Ambassadors, Funding & Support world wide, Job Board



z Skills Help Desk  
to assist clients and community  
[zskills@us.ibm.com](mailto:zskills@us.ibm.com)



## Student Mainframe Contests

- 6 years
- 15 countries
- 22,000 students, 3000 schools



## Awareness – academic and industry

Roundtables, conferences, seminars,  
*Expanding worldwide*

# How educators get started

Educators join the initiative at: [ibm.com/university/academicinitiative](http://ibm.com/university/academicinitiative)



737  
Schools

Download Course Materials



45 courses

Request access to mainframes



Hubs that provide  
remote access  
world wide

Attend faculty education



Professor seminars,  
education coupons

# Academic Initiative Courseware

## Free downloads from Course Repository

- Foundational to intermediate and advanced content
- Instructor and student textbooks and guides
- Modules to full semester courses
- Lab exercises – hands-on application
- Exams and tests

## How faculty use our courseware

- Teach a course “as is”, most are full semester (classroom or online)
- Develop enterprise computing undergrad major, specialization track in graduate program, or certificate program
- Teach a course as a special topic or elective
- Integrate modules, chapter, labs into existing curricula



## IBM System z courses available:

### Foundational principles

- Intro to the Mainframe: z/OS Basics\*
- Intro to the Mainframe: Networking\*
- Intro to the Mainframe: Security\*
- Intro to the Mainframe: Large Scale Commercial Computing

### Operating systems

- Linux on System z
- Introduction to z/VM®
- Introduction to z/VSE Basics
- UNIX® System Services (Module)

### User interfaces

- ISPF: z/OS Basic Interfaces

### Storage management

- VSAM

### Programming languages

- Assembler
- COBOL
- JCL

### Other

- z/OS Advanced Topics\*
- z/OS Emerging Technologies\*
- z/OS Installation

### Tivoli security, systems, network, and storage management courses

- IBM Tivoli License Compliance Manager for z/OS 4.2 Implementation
- IBM Tivoli System Automation for z/OS 3.1 Introduction and Operations
- IBM Tivoli System Automation for z/OS 3.1 Implementation and Administration
- IBM Tivoli Workload Scheduler 8.2 for zOS Scheduler's Workshop

### Information, data and transaction management

- Enterprise Server Data Management
- DB2 for z/OS Fundamentals
- DB2 Family Fundamentals (Cross product)
- DB2 SQL Workshop (Cross product)
- DB2 for z/OS Database Admin Workshop, Part 1
- DB2 for z/OS Database Admin Workshop, Part 2
- DB2 Programming Workshop for z/OS
- DB2 for z/OS Application Development
- DB2 for z/OS Query Optimization and Performance Tuning
- Intro to IMS\*
- An Introduction to IMS (Textbook reference)
- Transaction Management

### Application development

- WebSphere Application Server for z/OS
- Intro to IBM WebSphere Developer for z (Web based)
- WebSphere MQ for z/OS System Administration
- Developing COBOL with IBM Rational Developer for System z

### Diagnosis

- z/OS RAS and Diagnostics\*

### eLearning resources:

- Interactive e-Learning Module: z/OS Basics
- Flash Demo: Introduction to Rational Developer for System z
- Develop a batch DB2 for z/OS COBOL application using RDz
- Developing and debugging a COBOL DB2 application
- Editing record-oriented programs with the System z LPEX editor
- Learn about your future in Large Systems*
- Careers in Mainframes*

\*available in audio version

# Student Mainframe Contests: Generating student interest

## Six years, 15 countries and spreading worldwide

- ▶ No experience necessary
  - ▶ Three levels of challenges
- Prizes: T- shirts, iPods, Laptops, XBox360, Wii, Sony PSP, Nintendo DS, HDTVs, trips

## Countries to date:

- |                          |                                |
|--------------------------|--------------------------------|
| 1. Brazil                | 9. Thailand                    |
| 2. Belgium (BeNeLux)     | 10. United Kingdom             |
| 3. Netherlands (BeNeLux) | 11. United States (N. America) |
| 4. Luxembourg (BeNeLux)  | 12. Canada (N. America)        |
| 5. Norway (Nordics)      | 13. Australia                  |
| 6. Denmark (Nordics)     | 14. Taiwan                     |
| 7. Sweden (Nordics)      | 15. Russia                     |
| 8. Finland (Nordics)     |                                |

## Contests in 2010

- France (new)
- Mexico (new)
- Australia
- Russia
- US and Canada
- Taiwan
- Brazil
- UK
- Netherlands



[ibm.com/university/contest](http://ibm.com/university/contest)

Location	Contests	Students	Schools
Brazil	2007	2011	390
	2008	3287	400
	2009	2008	390
BeNeLux	2007	76	9
Nordics	2007	147	11
Thailand	2007	960	40
UK	2006	725	40
	2007	676	59
	2008	876	64
	2009	1132	70
North America	2005	750	85
	2006	1085	177
	2007	1750	325
	2008	1879	325
	2009	3000	425
Australia	2008	450	31
	2009	315	29
Taiwan	2009	560	44
Russia	2009	269	41
<b>Totals</b>	<b>19</b>	<b>21,956</b>	<b>2,955</b>

# IBM Subsidizes System z Mastery Exam in 2010 Offered at no cost to students

- **Worldwide offering** (\$95 USD value) to professors and students
  - z/OS Proficiency exam for entry level system programmers
  - Available at 5000+ Prometric locations
  - Avenue for students to validate z/OS knowledge and distinguish themselves from other job candidates
  - Industry feedback: Valuable measurement of 'Entry Level Criteria'
  - Analyst input: Key indicator of available skills
  - Eligibility - faculty members and students
- **Resources**

Based on the [Introduction to Mainframes: z/OS Basics](#) - 1,809 Attempts (78.9% success rate) in 28 countries

Learn more at:

- [ibm.com/developerworks/university/systemz/masterytest/](http://ibm.com/developerworks/university/systemz/masterytest/)
- [ibm.com/certify/mastery\\_tests/ovrZ01.shtml](http://ibm.com/certify/mastery_tests/ovrZ01.shtml)

**IBM System z Mastery Test**  
Offered at no charge in 2010

Validate your skills.  
Enhance your resume.  
Build your future!

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**Learn how you can benefit from taking the IBM System z Mastery Test!**

The IBM System z Mastery Test is a proficiency exam for entry level system programmer tasks that can be taken at authorized Prometric sites around the world. It validates the knowledge contained in IBM *Introduction to the New Mainframe: z/OS Basics*. This textbook provides students of introductory systems technology with the background, information, and skills necessary to begin using the basic facilities of a mainframe computer.

**Program Conditions:**

- Students who are enrolled full-time or part-time at an accredited educational institution


**Program Details:**

- IBM System z Entry Level for z/OS System Programmer Mastery Test 2010 offered at no charge
- Self-study materials provided
- Available worldwide

**Test Preparation**

Take a mainframe enterprise computing course at your school, such as *Introduction to Enterprise Systems* (or its equivalent) or prepare for this test on your own.

1. Read the System z Mastery Test objectives.
2. Download the student textbook and course materials and study them at your own pace.
3. Complete the Sample Assessment test (optional).
4. Request a test voucher number.
5. Register and take the System z Mastery Test and get your results immediately.



**Passing the System z Mastery:**

- Is a tremendous accomplishment
- Increases your job prospects with Fortune 1000 companies
- Validates your mainframe knowledge
- Allows you to post your resume on the IBM Academic Initiative Student Opportunity System
- Gives you respect and recognition among your peers
- Is considered the standard for entering the mainframe job market by IT Industry Analysts

For more information visit the IBM Academic Initiative System z site at [ibm.com/university/systemz](http://ibm.com/university/systemz) or contact [zsk@ibm.com](mailto:zsk@ibm.com)

  
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# Opportunities for clients to increase mainframe skills

- List of schools teaching the mainframe  
No charge  
[ibm.com/university/systemz](http://ibm.com/university/systemz)

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- Enterprise Computing Community  
No charge  
[ecc.marist.edu/](http://ecc.marist.edu/)

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- z/OS® Certificate Program  
Reduced Fee – college credits  
[idcp.org/learnzos](http://idcp.org/learnzos)

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- IBM Training e-learning bundles  
Reduced Fee  
[ibm.com/training](http://ibm.com/training)

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- Community Resources
  - Academic Initiative course materials
  - Introduction to System z Mini-BootcampNo charge  
[ibm.com/systems/z/education/skills\\_coursematerials.html](http://ibm.com/systems/z/education/skills_coursematerials.html)

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- **Questions?**  
z Skills Help Desk  
No charge  
[zskills@us.ibm.com](mailto:zskills@us.ibm.com)

# IBM System z Academic Initiative Germany

- [Humboldt University of Berlin](#) and [Technical University of Berlin](#) – Mainframe Summit
- [University of Applied Sciences Bochum](#) – Summer School
- [University of Applied Sciences Coburg](#) – Lectures
- [University of Applied Sciences Darmstadt](#) – Hands-on and Lectures
- [Technical University of Darmstadt](#) – Lectures
- [Technical University of Dresden](#) – Lectures
- [University of Applied Sciences Esslingen](#) – Lectures
- [University of Hamburg](#) – Hanseatic Mainframe Summit
- [Technical University of Kaiserslautern](#) – Mainframe Summit
- [Karlsruhe Institute of Technology \(KIT\)](#) – Lectures
- [University of Applied Sciences Koeln](#) – Seminar
- [University of Applied Sciences Krefeld](#) (Niederrhein) – Seminar
- [University of Leipzig](#) – Lectures and Hands-on
- [University of Lueneburg](#) – Hands-on
- [Cooperative State University Mannheim](#) – Lectures\*
- [University of Muenster](#) – Lectures and Hands-on
- [University of Applied Sciences Schmalkalden](#) – Lectures
- [Cooperative State University Stuttgart](#) – Lectures\*
- [Stuttgart Media University](#) – Lectures
- [University of Tuebingen](#) – Lectures and Hands-on
- [IT Academy Bayern](#) – Training Program
- [IBM Germany R&D](#) – zSummer University



**Dr. Stephan Kammerer**  
IBM Germany  
Academic Initiative leader

Status 07/2010  
\* planned in 2010/11

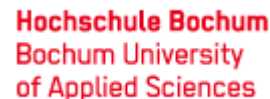
# Mainframe Education Activities in Germany

- University of Tuebingen - Curriculum, System z hardware
- University of Leipzig - Curriculum, System z hardware
- Karlsruhe Institute of Technology KIT – Mainframe lectures, System z hardware
- IBM zUniversity Mainframe summer school
  - 2 week event in Boeblingen Lab, 8/23 – 9/03
  - Deep dive into System z and IBM
- 10th IBM Summer Summit at the University of Bochum
  - 8/2 - 09/2, <http://www.hochschule-bochum.de/fbe/ibm-seminar.html>
- Hanseatic Mainframe Summit at the University of Hamburg
  - 8/30 - 10/08
  - <http://vsis-www.informatik.uni-hamburg.de/teaching/ss-10/hms2010/>
- Kaiserslautern Mainframe Summit at the Technical University of Kaiserslautern, 9/27 - 10/8
  - <http://www.lgis.informatik.uni-kl.de/cms/courses/mainframesummit/>
- University Days
  - System z University in Berlin (May 2010)



# Schools in Attendance at GSE Management Summit

- Hogeschool InHolland
- University of Applied Sciences Bochum
- University of Leipzig
- Karlsruhe Institute of Technology (KIT)
- University of Muenster
- Cooperative State University Stuttgart
- Stuttgart Media University
- University of Applied Sciences Karlsruhe
- University of Stuttgart
- Technical University of Berlin
- University of Duisburg-Essen
- University of Applied Sciences Heilbronn



# Summary

- *IBM continues to invest in developing more mainframe skills for our clients*
- *The program and the number of schools continues to grow*
- *IBM Clients are connecting with System z Academic Initiative member schools*
- *There are frequent examples of hiring and investment in mainframe skills*



# **System z Mainframe Education Activities at Bochum University of Applied Sciences**

Professor Dr. –Ing Carsten Koehn

Dean, Department of Electrical Engineering and Computer Sciences

# Backup

## Poland – Academy of Humanities and Economics

*“Mainframe education program in our Academy is going quite well. About 70% of students which already graduated , work with Mainframes or related.*

*They are spread all over the country. They work for example in: **Ministry of Interior and Administration (gov), BRE Bank, Steria***

*Students which still attend our Academy, have just finished their one month practice work which is mandatory to graduate. Most of them were practicing in BRE Bank (as CiCS and z/OS operators) and in Steria (as JCL programmers).”*

**Gregory Powiedziuk – Professor,  
Academy of Humanities and Economics in Lodz**

# France - Academic Initiative z Program – Major schools

Academic Initiative > Products & technologies >

## System z program



Getting Started | Learn | Teach | Participating schools

U.S. and Canada | **Europe, the Middle East and Africa** | Asia Pacific

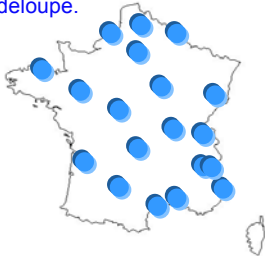
| Latin America |

France	
ESIAL	<a href="http://www.esial.uhp-nancy.fr">www.esial.uhp-nancy.fr</a>
EPISI Montpellier (Ecole Privée des Sciences Informatiques)	<a href="http://www.episi.fr">www.episi.fr</a>
School for Computer Science and Advanced Technologies (EPITA)	<a href="http://www.epita.fr">www.epita.fr</a>
SUPINFO, The International Institute of Information Technology	<a href="http://www.supinfo.fr">www.supinfo.fr</a>

Present in 25 cities in France



Martinique, Strasbourg, Réunion, Bordeaux, Mâcon, Nice, Nîmes, Saint-Malo, Troyes, Valenciennes, Caen, Grenoble, Nantes, Toulouse, Tours, Clermont-Ferrand, Lille, Limoges, Lyon, Marseille, Orléans, Montpellier, Reims, Rennes, Metz, Guadeloupe.



Paris



Present in 6 cities in France



Montpellier, Paris, Arras, Bordeaux, Lyon, Nantes



Nancy



# France - zAcademy

- "La Banque Postale", "Sogeti" and IBM create the « zAcademy », a professional course for IBM mainframe technologies in the bank sector.
  - Paris - 29 avr. 2009:
  - **La Banque Postale, Sogeti and IBM created the "zAcademy":**
  - **A training course for IBM mainframe technology professionals in the bank La Banque Postale, Sogeti, filial at 100% of Capgemini Group and IBM (NYSE: IBM) have joined forces for a period of 3 years in order to create "zAcademy.**
  
- La Banque Postale and Sogeti drive all the way educational technology mainframes in the bank. At the end of training, each professional will obtain a certification by IBM.

*"The creation of the zAcademy will ensure the renewal and development of skills of our engineers on systems mainframe, profiles more and more scarce on the market yet sought because the mainframe is central to our System Information," commented Philippe Blin, Director of Information Systems of La Banque Postale.*

# Italy Examples

## Sapienza Università di Roma



- ❑ 2006/2007 – Seminar - First level degree - 70 students
- ❑ 2007/2008 - Full formal course 12 x 2 hours + 12 x 2 hours labs - 25 students
- ❑ 2008/2009 - Full formal course 12 x 2 hours + 12 x 2 hours labs - 40 students
- ❑ 2009/2010 - Full formal course 12 x 2 hours + 12 x 2 hours labs - starting

## Università di Catania



- ❑ 2005/2006 – Science of Information – Full formal course - 170 students
- ❑ 2006/2007 – Full formal course 12 x 2 hours - 120 students
- ❑ 2007/2008 – Full formal course – 60 students.
- ❑ 2008/2009 - Full formal Course – 60 Students – Credits Doubled - Examinations
- ❑ 2009/2010 - Full formal Course – 60 Students – Credits Doubled (planned for March 2010)

## Politecnico di Bari



- ❑ 2005/2006 – Engineering and Electronics - Seminar - 90 students
- ❑ 2007 UniBari buys System z9 BC

## Università di Palermo



- ❑ 2005/2006 – Institute of Engineering – Full formal course – Master degree – 70 students
- ❑ 2006/2007 – Institute of Engineering – Full formal course – Master degree – 96 students
- ❑ 2007/2008 – Institute of Engineering – Full formal course – Master degree – 50 students
- ❑ 2008/2009 – Institute of Engineering – Full formal course – Master degree – 70 students
- ❑ 2009/2010 - Institute of Engineering – Full formal course – Master degree – 70 students (planned 11/09)

## Seconda Università di Napoli



- ❑ 2006/2007 – Seminar - First level degree - 25 students

Almost 1,000 Students!

# Norway

HOGSKOLEN I OSLO UNIVERSITY, NORWAY

**"One of my goals is to create a familiarity with the mainframe in the university setting, to get students interested in, excited about and familiar with the System z (platform)."**

— Per Fremstad, senior IT specialist, IBM




Photo by Pal Roodahl

# Czech Republic

## CZECH TECHNICAL UNIVERSITY, CZECH REPUBLIC

Prague

Contact: Martin Bloch, Tomas Oberhuber, Professors  
 bloch@fel.cvut.cz; oberhuber@kmlinux.fjfi.cvut.cz  
 www.cvut.cz

The Czech Technical University is the first university to provide a mainframe module in the Czech Republic as part of its MSC in Computer Science program. This module covers many aspects of large systems computing including: hardware, OS, database management, system programming, JCL, transaction management, ISPF, DB2\* and WebSphere\* Application Server. Students build z/OS\* and Linux\* on mainframe skills and knowledge through practical application on the mainframe system. Technical experts from the mainframe community work closely with the Czech Technical University in events such as university days to help build awareness in the student and academic community.