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Assessing Language Skills in the English for Engineering Students' Classroom

Outline

- ✓ University of Applied Sciences Zwickau, Germany

- ✓ English for Specific Purposes – Module Structure

- ✓ Contents in
  Physical Engineering and Computer Science

- ✓ Module Exams –
  Science Slam, Poster, Written Exam

- ✓ Sample Assignments

- ✓ Conclusion

University of Applied Sciences Zwickau

Study Programs - UAS Zwickau

9 faculties, 40 programs
5,000 students

- Automotive Engineering
- Mechanical Engineering
- Traffic Systems Control
- Industrial Management & Engineering
- Facility and Environmental Engineering
- Electrical Engineering, Information Technology
- **Bachelor Computer Science**
- **Master Computer Science (Global Business & Project Management)**
- **Microtechnology/ Biomedicine/ Energy Technology**
- Textile and Leather Technology
- Applied Art & Design (Fashion Design, Woodcraft, Musical Instrument Making)
- Healthcare Management, Sign Language Interpreting
- Languages and Business Administration
- Economics
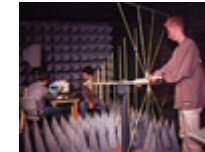
Major Research Questions

- ✓ How can we properly prepare students for their language-related assignments in their academic and professional fields? What is the structure of an English for Specific Purposes course?

- ✓ How can we measure the progress made and make results a valuable add-on to the CV of our graduates?

- ✓ What type of exams can effectively measure the language proficiency of students both in general English and in English for Specific Purposes?

ESP classrooms should …

✓ consider in detail the very specific communicative needs of students and graduates in their professional areas (subject, skills, genres)

✓ train the receptive and productive skills for professional life,

✓ prepare for real-life communication scenarios in academic and professional contexts,

✓ consider the initial language level and opportunities to raise it along authentic tasks and assignments

✓ perform standardised, valid tests adhering to CEFR standards in order to make graduates compatible with employer's expectations

✓ continuously adapt to the changing professional environment of students and graduates

Constraints ...

Student

Instructor

✓ **Heterogenous groups**

✓ **Limited time**

✓ **Lack of subject-specific knowledge**

✓ **Focus on practice**

✓ **CEFR requirements**

✓ **Competitiveness/Employability**

- Diverse pre-requisites in both language and subject
- Motivation?

- Level of subject expertise
- Practice?
- Time?

Structure …

Professional English

EAP/ Scientific English

Business English

Intercultural Communication Skills

CONTENTS
&
SKILLS

Skills

**Reading
Listening
Speaking
Writing**

**Presenting
Negotiating
Telephoning
Writing
in
Academic/
Professional
Contexts**

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Module Overview

	Physical Engineering MEMS Biomedicine Energy	Computer Science
C1/ C1+		SPR613, 4 SWS, M.Sc.
B2+	SPR629 (WPF), 3 SWS, B.Sc.	SPR623 (WPF), 2 SWS, B.Sc.
B1-B2	SPR611,SPR612, 3 SWS B.Eng.	SPR601, 4 SWS, B.Sc.
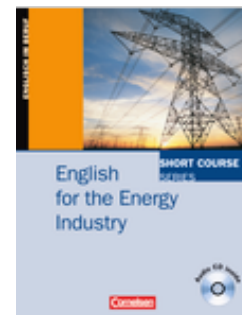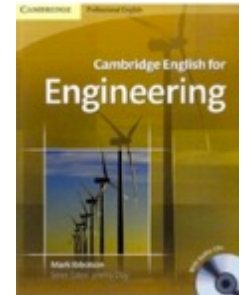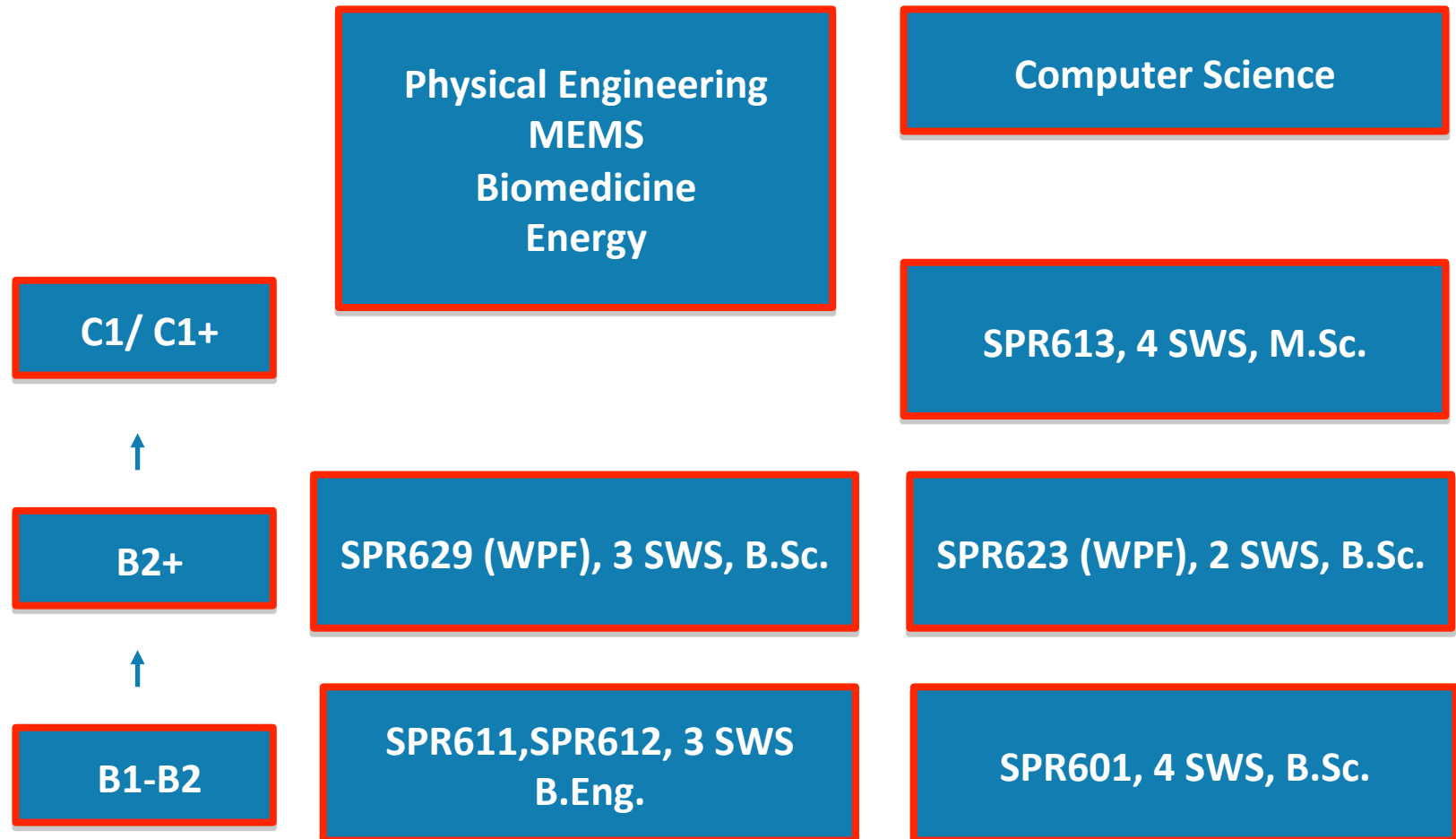
Contents

Physical Engineering, Biomedicine, MEMS

Compulsory - B1-B2, 3 ECTS

Elective B2+/ C1, 3 ECTS

✓ **General Science & Academic Topics (15%)**
✓ **ESP (45%)**
Relevant lexical/ grammatical structures of Technical English/ Subject

✓ **Business English (30%)**
Letter/ E-mail Writing, Telephoning, Job, Applications/ Interviews, Basics of project work, Presentation of a project, Abstract Writing

✓ **Intercultural Aspects (10%)**
Fundamental terms (cases)

✓ **State-of-the-art in Physical Engineering (25%)**
Practising oral and written academic and technical genres
✓ **Project- and product life-cycle, (25%),** Product development, innovation etc.
✓ **Business Communication (30%)** Business-related genres (business plan, business correspondence), customer care
✓ **Cultural Awareness, Cultural values at work (20%)**
 Hotspots and critical incidents (case discussions)

Compulsory, CEFR Level B1/B2

SPR611

Common Topics

SPR612

Physical Engineering (45%)
Fundamentals of Physics,
Important Physicists
High Technologies
Materials Science,
Elements and Properties
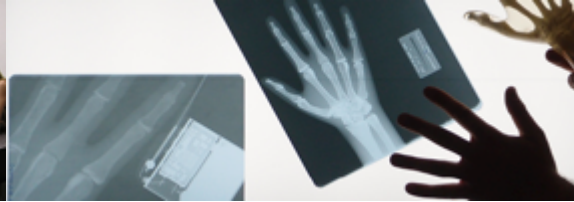**Biomedicine** (Human Body, Devices, Investigations)
Measurement & Process Engineering
(Devices, Functionality)
Energy and Environment
(Power plants, Efficiency, development)
…

Academic / Scientific English (15%) Vocabulary, Abstract Writing, Presentation, Graphs/Charts, Symbols, Signs
Business English (30%)
Business Writing, Job Applications
Intercultural Issues (10%)
Working in teams Hotspots, Problems
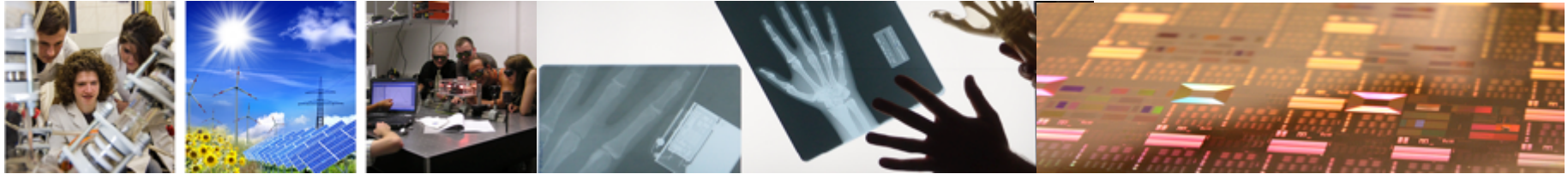…

MEMS (45%)
Fundamentals of Physics,
MEMS,
Materials Science
Elements and Properties
Important Scientists in the field
Magnetism
Semiconductors
Photovoltaics
Laser Technology
Nanotechnology
Biotechnology
Materials Science
…

Elective, CEFR Level B2+/C1

SPR 629

- ✓ **State-of-the-art in Physical Engineering (50%)**
  Practising oral and written academic and technical genres
  Project- and product life-cycle, project work and management **Preparing for the global world of work** (application, letter of motivation, job interview for internships and career, scientific conference, poster presentation, panel discussion, chairing a discussion – meeting, panel etc.) **(15%)**
- ✓ **Business Communication (15%)**
  Major organization patterns (R&D, QA, PS),
  Managing more complex oral and written scientific/business-related genres
  Business-related genres (business plan, business correspondence, recruiting)
- ✓ **Cultural Awareness, Cultural values at work (20%)**
  Discussing case studies, critical incidents
  Management of time/ space in projects,
  Hotspots and critical incidents (case studies on various cultures)
  Technical genres (e.g. data sheets, requirements specifications)

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Material: CD-ROM & E-Magazines

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Material: Websites

HOW STUFF WORKS:
http://www.howitworksdaily.com

HOW IT WORKS:
http://www.howitworksdaily.com

MIT TECHNOLOGY REVIEW:
http://www.technologyreview.com

SCIENTIFIC AMERICAN:
http://www.sciam.com

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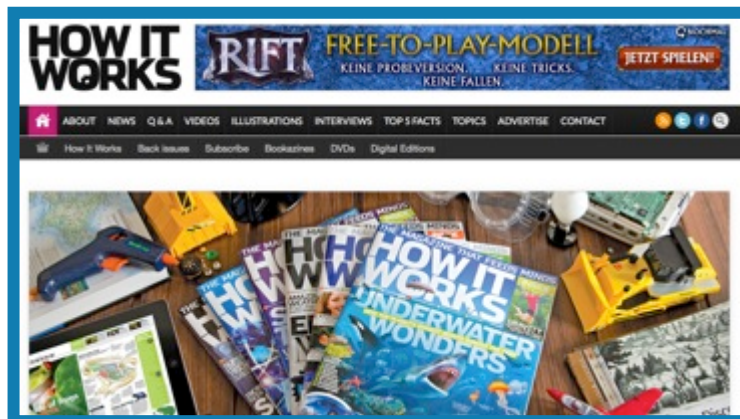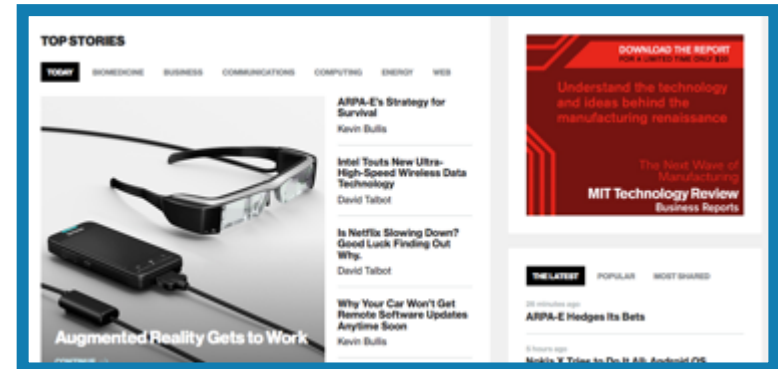
Material: Newsletters

ELECTROIQ – SOLID STATE

MIT TECHNOLOGY REVIEW
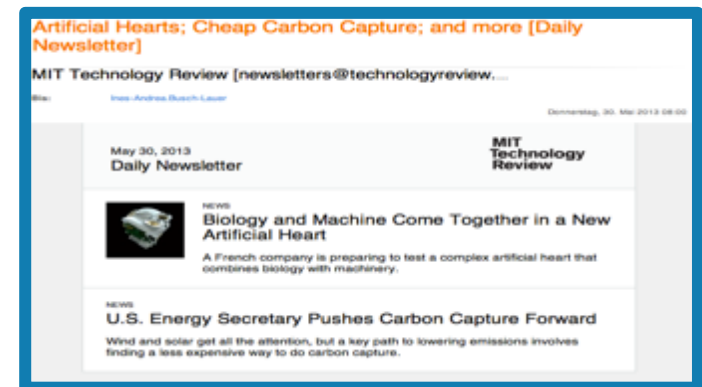
TECHREPUBLIC

RENEWABLE ENERGY

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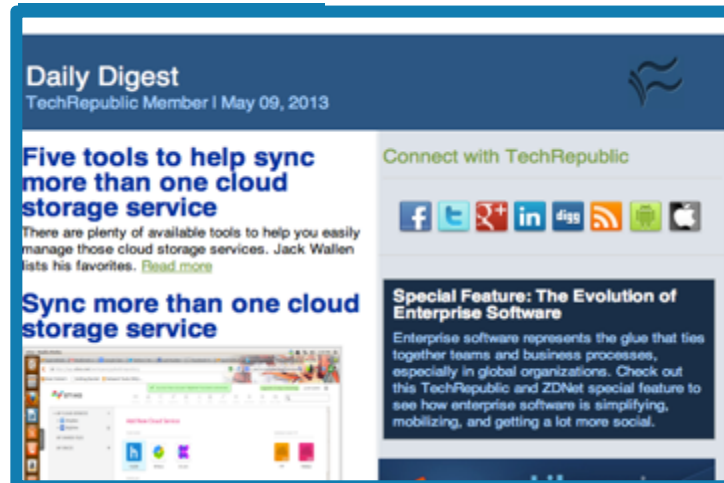
Overview of Exams

✓ International Language Level Tests (e.g. TOEFL; TOEIC, BEC)

✓ UNICERT© examinations (levels II & III)

✓ telc-exams (for professional purposes)

✓ MOTET (Technical English)

Problems:

✓ Preparation courses required and high administrative effort

✓ Cost-intensive for students

✓ Long time for preparation, restricted validity and acceptibility

✓ Test items are not required for target group

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Expectations

ESP exams should evaluate and prepare for ......

- ✓ specific contents and communication scenarios in a subject/ profession

- ✓ all four language skills and complex communication tasks of students'/graduates' practice

- ✓ level evaluation according to CEFR with regard to employability

ESP exams should be easy to …

- ✓ correct, in particular for large groups

- ✓ evaluate with regard to the communicative adequacy of skills

MOTET – Mondiale Online Test

A General Technical English Module (technical vocabulary, grammar, listening and A Speaking Test A Writing Task (typical text types at the workplace)

Teacher Training Webinars: http://www.mondiale-testing.de/site/images/stories/files/MT-Webinars-2013.pdf

Test Options

Simulation of authentic communication tasks

Oral
- ✓ Presentation,
- ✓ Panel discussion,
- ✓ Science Slam,
- ✓ Poster Session

Written
- ✓ Abstracts (e.g. for student conference)
- ✓ Essays (on subject-focused topics),
- ✓ Application (letter of motivation, cover letter)
- ✓ Business evaluations
- ✓ Reports, summaries,

Exam Structure

Compulsory Modules

Oral (33%)
Presentation/ Panel discussion (33%)
Abstracts (e.g. conference abstract)

Written (67%)
a.General English
b.Working on words
c.Working on grammar
d.Describing trends
e.Reading comprehension plus assignments

Elective Module

Oral (33%)
Poster Session (33%)
Poster

Written (67%)
a.Letter of motivation
b.E-Mail to solve an intercultural communication problem
c.Evaluation of a company with regard to business data, product portfolio etc.
d.Reading comprehension of a specialist text (summary and comment)

Science Slam

- ✓ **Short competitive speech** on a scientific topic

- ✓ Popularized transfer of knowledge

- ✓ Evaluation by audience (contents, structure, comprehensibility)

- ✓ Parameters: 5 minutes presentation, 3 minutes discussion

Poster & Poster Session
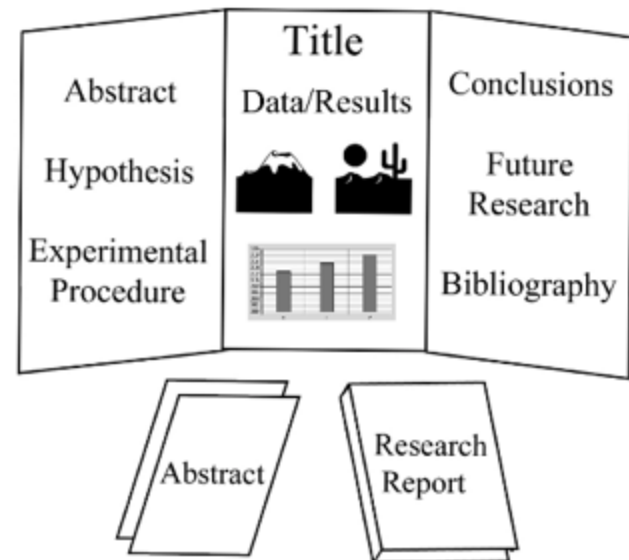
WJSHS SCIENCE POSTER PRESENTATION

Definition:

➢ The poster is a hybrid between a research paper and an oral presentation. The primary purpose of a poster is to communicate what was done, what data was obtained, the researcher's conclusions and recommendation for future research. A poster is more concise since the author is present to explain and elaborate on the research work. You should typically have a single page for each major section of the poster.

Composition:

The poster contains the following sections:

➢ Title
➢ Student name and school name
➢ Abstract
➢ Introduction
➢ Methods
➢ Results
➢ Conclusions
➢ Acknowledgements

http://wjshs.org/userfiles/Documents/Poster%20presentation.pdf

Poster

Written Exam – Letter of Motivation

Task 1 (allocated time 20 minutes):
You are required to submit a letter of motivation (approx. 180-200 words) for a project manager position at **Transim Technology Corporation** – a company based both in Portland, Oregon, and Chemnitz, Germany. Read the job description and the requirements for your e-mail letter below before you start writing.

Letter Requirements: The American HR manager, Paul Wonderful, is interested in brief statements on the following issues:
-what prompted your interest in Computer Science,
-your study and career so far,
-your practical experience in Computer Science,
-your specific skills and greatest strength,
-what key cultural issues you consider relevant in the cooperation between American and German co-workers

Written Exam – E-Mail

Task 2 (allocated time 20 minutes):

Transim Technology Corporation wants to expand to China. Your American IT manager, John Myers, wants you to explain how you will prepare your European team (10 experienced programmers) comprising of Brits, Swedes, Italians and Russians for the cooperation.

Write an e-mail to John explaining important cultural issues and offering at least **THREE** options to assure that all co-workers feel more comfortable when working together, eventually making the planned joint venture USA-Europe-Asia a success.

Written Exam – Business

Task 3 (allocated time 20 minutes):

Mr. Elias Dolittle, the UK-based manager *Corporate Alliances* at **Transim Technology Corporation**, wants you to briefly check the company profile of **pmc sierra** regarding a strategic alliance. Write a brief statement (150 words) evaluating the company (current status, future).
Give good reasons for your (positive/ negative) assessment. Use some relevant keywords your assistant already gathered for you. If required, you can refer for more details to the FAQ section on http://investor.pmc-sierra.com/phoenix.zhtml?c=74533&p=irol-faq#4056.

Written Exam – Reading & Writing

Task 4 (allocated 30 minutes):

Read the extract from the text **LONG LIVE THE WEB** (below). Briefly summarize its contents in English (50 words,) but do **NOT** simply copy sentences. Add a comment (50 words) to be sent to the editor stating your opinion on the topic.

Length of text: 1,000 words

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Conclusion

✓ Students responded positively to the hands-on test assignments of all course exams

✓ Poster sessions and science slam were rated particularly positive

✓ ESP courses and exams spurred motivation of learners to continue self-instructed learning of subject-related content (e.g. reading subject-related newsletters)

✓ The more specific the training was, the more interest was shown by the students and the better the results of the assignments and tests. Participants recommended other students to attend the program!

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Thank you very much for your attention!