PROGRAMMING ENVIRONMENTS FOR ELECTRONICS AND TELECOMMUNICATIONS
(Lectures – Winter semester 2007)

Assoc Prof. M. DRUTAROVSKÝ (weeks 1-4), Assoc. Prof. J. ŠALIGA (weeks 5-8)

1. **Introduction to application programming in electronics and telecommunications**
   exploitation and advantages of high-level programming languages in embedded applications,
   typical examples of programmable target hardware for embedded applications,
   demonstration of complete development cycle for 8 and 32-bit microcontrollers in **uVision3** environment of Keil ARM company
2. **Matlab simulating environment I**
   basic philosophy
   programming language, basic commands
3. **Matlab simulating environment II**
   tooloxes and their usage,
   work with external files
4. **Matlab/Simulink**
   Matlab - Simulink connection,
   C language and Matlab
5. **LabView programming environment I**
   basic components and control elements,
6. **LabView programming environment II**
   demonstration of complete example development
7. **LabView programming environment III**
   advanced components and control elements,
   libraries and their exploitation.
8. **LabWindows programming environment**
   basic components and control elements,
   demonstration of complete example development

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1. **Úvodné cvičenie**
   obsah predmetu, podmienky udelenia klasifikovaného zápočtu, štýl zadaní a práce na cvičeniach počas semestra, štruktúra programového prostredia Matlab
2. **Matlab simulating environment**
   basic commands and debugging capabilities,
   graphical output
3. **Matlab simulating environment**
   development of own m-functions,
   processing of input/output data,
   work with selected toolboxes
   topic definition of the final Mtalab project
4. **Matlab – work on the project**
   consultation of project topic/problems
5. **LabWindows programming environment**
   basic commands and debugging capabilities,
   graphical output
6. **LabWindows programming environment**
7. **LabView programming environment**
   topic definition of the final LabView/LabWindows project
8. **LabView (LabWindows) – work on the project**
   consultation of project topic/problems

Students will work with selected development tools in PC laboratory (V132). Tools (uVision, LabWindows, LabView) will be available as evaluation packages and can be installed also at home. Classified credits will be given after successful dependence of project I (Matlab) and project II (LabView or LabWindows).

Remarks:
Formal part of projects I. and II. (max.**25/25 points**), defends of projects I. and II. (max. **25/25 points**).

Credits:	A	>90 points
	B	81-90 points
	C	71-80 points
	D	61-70 points
	E	51-60 points
	FX 1	< 51 points

Recommended references

web pages of the subject
uVision User's Guide, Keil - an Arm company, http://www.keil.com/support/man/docs/uv3/
Martin; H: LabVIEW for Telecom Semiconductor Automotive Sound & Vibration & General Test & Measurement, Prentice Hall
Nasser Kehtarnavaz, Namjin Kim: Digital Signal Processing System-Level Design Using LabVIEW, Elsevier 2005
Shahid F.Khalid: LabWindows/CVI Programming for Beginners, Prentice Hall 2000