SLOVENSKÁ TECHNICKÁ UNIVERZITA V BRATISLAVE FAKULTA CHEMICKEJ A POTRAVINÁRSKEJ TECHNOLÓGIE

Evidenčné číslo: FCHPT-číslo práce

Názov práce

DIPLOMOVÁ PRÁCA

rok Meno študenta

SLOVENSKÁ TECHNICKÁ UNIVERZITA V BRATISLAVE FAKULTA CHEMICKEJ A POTRAVINÁRSKEJ TECHNOLÓGIE

Evidenčné číslo: FCHPT-číslo práce

Názov práce

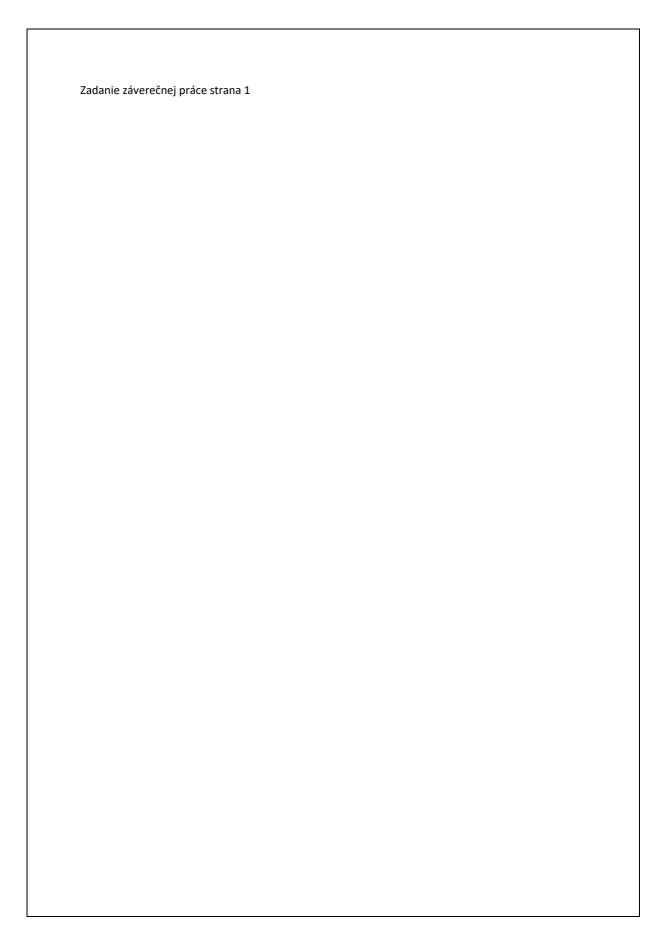
DIPLOMOVÁ PRÁCA

Študijný program: Riadenie Procesov Študijný odbor: 5.2.14. Automatizácia

Školiace pracovisko: Oddelenie informatizácie a riadenia procesov

Vedúci práce: Ing. Martin Klaučo, PhD.

rok Meno študenta



Poďakovanie

Write here the acknowledgment

Abstract

English abstract

Abstrakt

Slovenský abstrakt

Obsah

Po	oďak	vanie	iii
A l	bstra	et	v
A l	bstra	xt	vii
1	Intr	oduction	1
	1.1	Typesetting Guidelines	 2
2	The	ory	5
	2.1	First Section	 5
	2.2	Second Section	 5
		2.2.1 A Subsection	 5
		2.2.2 A Subsection with Figure	 6
3	Cor	clusions	11
A	Res	nmé	13
т:	tonot		15

x OBSAH

Kapitola 1

Introduction

This LaTeX template is intended for student writing their final theses at Faculty of Chemical and Food Technology. This chapter covers the basic setup of the LaTeX template as well as simple guidelines for high-quality typesetting. This template generates the thesis structure based on requirements. The template is intended for Slovak-writing as well as for English-writing students

```
\documentclass[english]{iamthesis}
% changle "english" to "slovak" for english version of the thesis
```

The file structure of this LaTeX template

The root document is the main.tex. Here, the student must specify key-values of the thesis (lines 7 to 32), namely:

2 Introduction

```
% student name with title e.g. Ing. Martin Klaučo
\def\thesisauthor{Students Name}
% year of submmiting to AIS
\def\thesisyear{Year}
% registration number generated by AIS e.g. 19990-50920
\def\thesisnumber{Number}
% thesis type: BACHELOR|MASTER|DISSERTATION or in slovak
% BAKALÁRSKA|DIPLOMOVÁ|DIZERTAČNÁ
\def\thesistype{DIPLOMOVÁ}
% thesis title
\def\thesistitle{Title of the Thesis}
% thesis supervisor including degrees e.g. MSc. Ing. Martin Klaučo, PhD.
\def\thesissupervisor{Ing. Martin Klaučo, PhD.}
% study field (translate to english if neccesarry) e.g.
% "Riadenie Procesov" or "Process Control"
\def\thesisprogram{Riadenie Procesov}
% Institute (translate to english if neccesary)
% e.g., "Institute of Information Engineering, Automation, and Mathematics"
\def\thesisinst{Ústav Automatizácie, Informatizácie a Riadenia Procesov}
```

The file assignment.pdf is to be replaced by assignment generated by the AIS system.

The file bibfile.bib is to be expanded with your references. You can also provide your own bibfile. See command \providebibliography.

1.1 Typesetting Guidelines

This template comes with predefined macros, help to ease up the typesetting of math. Refer to table 1.1 for examples.

Before submitting the thesis check if

- all equations are referenced in the text (remember, you can refer only to equation which was already written),
- all figures are referenced in the text (remember, figure must not appear necessarily on the same page as you would like),
- all tables are referenced in the text (remember, figure must not appear necessarily on the same page as you would like),
- every chapter, section or subsection must start with a paragraph,
- every chapter, section or subsection must end with text, not with equation, nor with table or figure,
- if writing in English, check you grammar with free tool www.grammarly.com.

Example of citing literature [1].

4 Introduction

Tabuľka 1.1: Example of built-in commands

	1.	1
command	results	remark
$\ui{F}{a}$	$F_{ m a}$	is used when the subindex "a" is
		part of notation
$\uis{F}{a}{k}$	$F_{\mathrm{a},k}$	is used when the subindex "a" is
		part of notation and "k" is va-
	-	riable
\Ts	$T_{\rm s}$	sampling time
\lrp{ \frac{a}{b} }	$\left(\frac{a}{b}\right)$	expandable parenthesis based on
		the expression size
\lrb{ \frac{a}{b} }	$\left\lceil \frac{a}{b} \right\rceil$	expandable brackets based on the
	101	expression size
$\displaystyle \inf\{f(x)\}\{x\}$	$\frac{\mathrm{d}f(x)}{\mathrm{d}x}$	
$\displaystyle \int diff\{f(x, y)\}\{x\}$	$\frac{\partial f(x,y)}{\partial x}$	
	0 10	
\diffxy{f(x,y)}{x}{y}	$\frac{\partial^2 f(x,y)}{\partial x \partial y}$	
	· ·	
$\displaystyle \int diffat\{f(x,y)\}\{x\}\{x=0\}$	$\frac{\partial f(x,y)}{\partial x}\bigg _{x=0}$	
·	12=0	
$\displaystyle \int difat\{f(x,y)\}\{x\}\{x=0\}$	$\frac{\mathrm{d}f(x,y)}{1}$	
•	$dx \mid_{x=0}$	
\dt{f(t)}	$\frac{\mathrm{d}f(t)}{\mathrm{d}t}$	
	$\mathrm{d}t$	

Theory

2.1 First Section

Some theory...

$$a^2 + b^2 = c^2 (2.1)$$

2.2 Second Section

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Praesent pulvinar lobortis justo, quis vulputate quam gravida id. Sed massa libero, fermentum at convallis a, fringilla at massa. Cras condimentum vel urna in accumsan. Morbi cursus risus eu magna efficitur rhoncus. Nullam tincidunt sit amet sapien non auctor. Morbi varius eros massa, nec tincidunt odio rhoncus et. Etiam sed orci sagittis, dapibus erat nec, venenatis velit. Ut malesuada, justo vel consequat ullamcorper, sem justo tristique purus, ac vulputate nulla lorem eu metus. In convallis orci mi, a varius est blandit a. Cras non gravida turpis, elementum molestie nisl. Duis in blandit magna.

2.2.1 A Subsection

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Praesent pulvinar lobortis justo, quis vulputate quam gravida id. Sed massa libero, fermentum at convallis a, fringilla at massa. Cras condimentum vel urna in accumsan. Morbi cursus risus eu magna efficitur rhoncus. Nullam tincidunt sit amet sapien non auctor. Morbi varius eros massa, nec tincidunt odio rhoncus et. Etiam sed orci sagittis, dapibus erat nec, venenatis velit. Ut malesuada, justo vel consequat ullamcorper, sem justo tristique purus, ac vulputate nulla lorem eu metus. In convallis orci mi, a varius est blandit a. Cras non gravida turpis, elementum molestie nisl. Duis in blandit magna.

6 Theory

Sed consequat odio at elementum mollis. Fusce lacinia vulputate magna, vel consequat justo sagittis sit amet. Vestibulum lorem lectus, aliquet vitae malesuada non, congue ac libero. Aliquam volutpat mi varius odio scelerisque, sed semper sem feugiat. Morbi mauris tellus, auctor vitae commodo id, bibendum ut ante. Maecenas condimentum mauris tellus, eu eleifend purus rhoncus non. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia Curae; Integer vel lorem vulputate magna faucibus aliquam. Donec in erat imperdiet, rutrum velit quis, tempor tortor. Maecenas aliquam ligula dolor, eu mollis ante tempor eget.

Interdum et malesuada fames ac ante ipsum primis in faucibus. In justo ligula, lacinia quis iaculis ac, ullamcorper eu metus. Donec nibh diam, elementum vitae leo non, lacinia faucibus eros. Nulla volutpat lacus et ante imperdiet interdum. Aliquam pretium urna a ullamcorper aliquam. Fusce fermentum lorem ac turpis feugiat pulvinar. Proin felis est, sodales eu pretium at, consequat at libero. Aliquam facilisis sapien non justo consectetur semper. Morbi rhoncus leo sit amet mattis ullamcorper.

2.2.2 A Subsection with Figure

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Praesent pulvinar lobortis justo, quis vulputate quam gravida id. Sed massa libero, fermentum at convallis a, fringilla at massa. Cras condimentum vel urna in accumsan. Morbi cursus risus eu magna efficitur rhoncus. Nullam tincidunt sit amet sapien non auctor. Morbi varius eros massa, nec tincidunt odio rhoncus et. Etiam sed orci sagittis, dapibus erat nec, venenatis velit. Ut malesuada, justo vel consequat ullamcorper, sem justo tristique purus, ac vulputate nulla lorem eu metus. In convallis orci mi, a varius est blandit a. Cras non gravida turpis, elementum molestie nisl. Duis in blandit magna.

Sed consequat odio at elementum mollis. Fusce lacinia vulputate magna, vel consequat justo sagittis sit amet. Vestibulum lorem lectus, aliquet vitae malesuada non, congue ac libero. Aliquam volutpat mi varius odio scelerisque, sed semper sem feugiat. Morbi mauris tellus, auctor vitae commodo id, bibendum ut ante. Maecenas condimentum mauris tellus, eu eleifend purus rhoncus non. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia Curae; Integer vel lorem vulputate magna faucibus aliquam. Donec in erat imperdiet, rutrum velit quis, tempor tortor. Maecenas aliquam ligula dolor, eu mollis ante tempor eget.

Interdum et malesuada fames ac ante ipsum primis in faucibus. In justo ligula, lacinia quis iaculis ac, ullamcorper eu metus. Donec nibh diam, elementum vitae leo non,

2.2 Second Section 7

lacinia faucibus eros. Nulla volutpat lacus et ante imperdiet interdum. Aliquam pretium urna a ullamcorper aliquam. Fusce fermentum lorem ac turpis feugiat pulvinar. Proin felis est, sodales eu pretium at, consequat at libero. Aliquam facilisis sapien non justo consectetur semper. Morbi rhoncus leo sit amet mattis ullamcorper. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Praesent pulvinar lobortis justo, quis vulputate quam gravida id. Sed massa libero, fermentum at convallis a, fringilla at massa. Cras condimentum vel urna in accumsan. Morbi cursus risus eu magna efficitur rhoncus. Nullam tincidunt sit amet sapien non auctor. Morbi varius eros massa, nec tincidunt odio rhoncus et. Etiam sed orci sagittis, dapibus erat nec, venenatis velit. Ut malesuada, justo vel consequat ullamcorper, sem justo tristique purus, ac vulputate nulla lorem eu metus. In convallis orci mi, a varius est blandit a. Cras non gravida turpis, elementum molestie nisl. Duis in blandit magna.

Sed consequat odio at elementum mollis. Fusce lacinia vulputate magna, vel consequat justo sagittis sit amet. Vestibulum lorem lectus, aliquet vitae malesuada non, congue ac libero. Aliquam volutpat mi varius odio scelerisque, sed semper sem feugiat. Morbi mauris tellus, auctor vitae commodo id, bibendum ut ante. Maecenas condimentum mauris tellus, eu eleifend purus rhoncus non. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia Curae; Integer vel lorem vulputate magna faucibus aliquam. Donec in erat imperdiet, rutrum velit quis, tempor tortor. Maecenas aliquam ligula dolor, eu mollis ante tempor eget.

Interdum et malesuada fames ac ante ipsum primis in faucibus. In justo ligula, lacinia quis iaculis ac, ullamcorper eu metus. Donec nibh diam, elementum vitae leo non, lacinia faucibus eros. Nulla volutpat lacus et ante imperdiet interdum. Aliquam pretium urna a ullamcorper aliquam. Fusce fermentum lorem ac turpis feugiat pulvinar. Proin felis est, sodales eu pretium at, consequat at libero. Aliquam facilisis sapien non justo consectetur semper. Morbi rhoncus leo sit amet mattis ullamcorper. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Praesent pulvinar lobortis justo, quis vulputate quam gravida id. Sed massa libero, fermentum at convallis a, fringilla at massa. Cras condimentum vel urna in accumsan. Morbi cursus risus eu magna efficitur rhoncus. Nullam tincidunt sit amet sapien non auctor. Morbi varius eros massa, nec tincidunt odio rhoncus et. Etiam sed orci sagittis, dapibus erat nec, venenatis velit. Ut malesuada, justo vel consequat ullamcorper, sem justo tristique purus, ac vulputate nulla lorem eu metus. In convallis orci mi, a varius est blandit a. Cras non gravida turpis, elementum molestie nisl. Duis in blandit magna.

Sed consequat odio at elementum mollis. Fusce lacinia vulputate magna, vel consequat justo sagittis sit amet. Vestibulum lorem lectus, aliquet vitae malesuada non, congue

8 Theory

ac libero. Aliquam volutpat mi varius odio scelerisque, sed semper sem feugiat. Morbi mauris tellus, auctor vitae commodo id, bibendum ut ante. Maecenas condimentum mauris tellus, eu eleifend purus rhoncus non. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia Curae; Integer vel lorem vulputate magna faucibus aliquam. Donec in erat imperdiet, rutrum velit quis, tempor tortor. Maecenas aliquam ligula dolor, eu mollis ante tempor eget.

Interdum et malesuada fames ac ante ipsum primis in faucibus. In justo ligula, lacinia quis iaculis ac, ullamcorper eu metus. Donec nibh diam, elementum vitae leo non, lacinia faucibus eros. Nulla volutpat lacus et ante imperdiet interdum. Aliquam pretium urna a ullamcorper aliquam. Fusce fermentum lorem ac turpis feugiat pulvinar. Proin felis est, sodales eu pretium at, consequat at libero. Aliquam facilisis sapien non justo consectetur semper. Morbi rhoncus leo sit amet mattis ullamcorper. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Praesent pulvinar lobortis justo, quis vulputate quam gravida id. Sed massa libero, fermentum at convallis a, fringilla at massa. Cras condimentum vel urna in accumsan. Morbi cursus risus eu magna efficitur rhoncus. Nullam tincidunt sit amet sapien non auctor. Morbi varius eros massa, nec tincidunt odio rhoncus et. Etiam sed orci sagittis, dapibus erat nec, venenatis velit. Ut malesuada, justo vel consequat ullamcorper, sem justo tristique purus, ac vulputate nulla lorem eu metus. In convallis orci mi, a varius est blandit a. Cras non gravida turpis, elementum molestie nisl. Duis in blandit magna.

Sed consequat odio at elementum mollis. Fusce lacinia vulputate magna, vel consequat justo sagittis sit amet. Vestibulum lorem lectus, aliquet vitae malesuada non, congue ac libero. Aliquam volutpat mi varius odio scelerisque, sed semper sem feugiat. Morbi mauris tellus, auctor vitae commodo id, bibendum ut ante. Maecenas condimentum mauris tellus, eu eleifend purus rhoncus non. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia Curae; Integer vel lorem vulputate magna faucibus aliquam. Donec in erat imperdiet, rutrum velit quis, tempor tortor. Maecenas aliquam ligula dolor, eu mollis ante tempor eget.

Interdum et malesuada fames ac ante ipsum primis in faucibus. In justo ligula, lacinia quis iaculis ac, ullamcorper eu metus. Donec nibh diam, elementum vitae leo non, lacinia faucibus eros. Nulla volutpat lacus et ante imperdiet interdum. Aliquam pretium urna a ullamcorper aliquam. Fusce fermentum lorem ac turpis feugiat pulvinar. Proin felis est, sodales eu pretium at, consequat at libero. Aliquam facilisis sapien non justo consectetur semper. Morbi rhoncus leo sit amet mattis ullamcorper.

2.2 Second Section 9



Obr. 2.1: A figure caption.

Maecenas posuere maximus ipsum, eget laoreet risus malesuada faucibus. Nam tincidunt at diam quis vestibulum. Nullam a tortor vestibulum, pellentesque diam eu, venenatis neque. Duis id egestas lacus. Cras condimentum lorem sit amet posuere venenatis. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia Curae; Morbi convallis at ipsum vitae tincidunt. Proin vel massa eget ligula accumsan convallis vitae sit amet est. Aliquam nisl felis, pharetra non purus malesuada, convallis faucibus est. Nulla odio nisi, tempus sed rhoncus vitae, accumsan vel nisl. Nunc varius tincidunt felis, ut iaculis lectus volutpat vitae. Vivamus id lectus sit amet nulla volutpat congue. Nunc fermentum sem ac neque feugiat lobortis. In vestibulum, nisi a condimentum posuere, urna enim dapibus ex, in ultricies est enim hendrerit ex.

Duis feugiat ac elit id molestie. Nullam a massa viverra, ornare odio nec, tempor enim. Proin suscipit est at leo bibendum ultricies. Curabitur ornare malesuada suscipit. Vivamus mollis orci at ante pellentesque, eu feugiat eros finibus. Curabitur facilisis, velit quis aliquet molestie, nunc nibh facilisis orci, ut porttitor neque tellus eget quam. Vivamus sollicitudin, ex non egestas consequat, tortor nulla tempor ligula, eget facilisis lectus quam nec metus. Etiam ornare ornare varius. Nulla facilisi. Nunc facilisis dui eget metus dictum, eu maximus felis semper. Morbi non aliquam est.

Theory

Kapitola 3

Conclusions

thesis conclusions

12 Conclusions

рораток А

Resumé

Resumé v slovenčine, sa píše v prípade, že záverečná práca ja napísaná v anglickom jazyku. Rozsah resumé tvorí 5-10% rozsahu diplomovej práce.

14 Resumé

Literatúra

[1] S. Boyd and L. Vandenberghe. *Convex Optimization*. Cambridge University Press, New York, USA, 7th edition, 2009.