# **Manual FEEST Spreadsheet**

# FEedback on Exams for Students and Teachers

## Introduction

A course often ends with a final exam. This exam should test how well a student understands the various topics discussed in the course. An analysis of the work of an individual student, as well as, the the work of the whole class, provides valuable information for the student and for the teacher.

Informed students will be aware of their strong and weak points. For students that passed the course, this can be of importance when starting new courses in which pre-knowledge on topics of the exam is used, and, for those that failed the exam, when they are preparing for the resit.

Informed teachers will not only get a better idea of the quality of the exam, but will also be able to offer better support to students preparing for a resit of the exam.

The goal of the project FEEST is twofold:

- provide teachers with a tool to analyze exams and report this analysis to their students;
- use the analysis of the exam to guide students preparing for a resit of the exam.

In this manual we describe the spreadsheet which we developed to analyze the test results. This spreadsheet also contains the input for a creating a personalized email, containing the analysis of the individual exam, which can be sent to the student.

# The spreadsheet

The spreadsheet consists of several Tabs:

- General data
- Grades
- Analysis
- Analysis of Topics

- Topic 1 up to 8
- Comments
- Emails

We discuss the content of each tab.

In general, white fields in the spreadsheet should be filled by the teacher. The other colored fields are fixed or automatically filled.

#### **General data**

In this tab we find fields for data on the exam that have to be provided by the teacher.

Exam Date Number of students Number of items Passing score		(imal 2000) (imal 60)						EW	out <u>the</u> pa	irts that ar	e in white			
ITEM	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Name	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Maximum score	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Weight of Items (multiplier, usually 🕨	1	1	1	1	1	1	1	1	1	1	1	1	1	1
TOPICS (provide your topics)														
Modeling purposes	1	1	1											
Modeling dimensions				1	1									
Modeling process						1	1	1						
Concepts, properties,types and rela	tions								1	1	1	1		
Units,scales and dimension													1	1
States and state charts														
Time and state transitions														
Developed by Jan Willem Knopper and Hans Cr Department of Mathematics and Computer Scie Eindhoven University of Technology Contact: info@mathdox.org														=

Name	Description
Exam	Code of the exam
Date	Date of the exam
Number of students	Number of participants (max 2000)
Number of items	Number of iems with a score (max 60)
Passing score	Passing score on scale 0-10
Name	Name of the item
Maximum score	Maximum score on the item
Weight of item	Multiplier of the score on the item (default value is 1)
Topics	List of at most 8 topics. In the table one can put an item score in each topic

	row. This provides the multiplier of the item within the topic.
--	---

#### Grades

GRADES	Exam: Date number number	0EB0 01/03/1 183						Pr	ovi	de the	e Na	ume,	ldni	umb	er a	nd :	scor	es											
	Chudant IDa	Items					-	~	-		0 40		4.0	4.0		45 4		- 40		20				25	20	07	20		
ame	Student <u>IDs</u>		1	2	3	4	5	6	7	8	9 10	11	12	13	14	15 1	0 1	/ 18	s 1a	20	21 4	<u>.                                    </u>	3 24	25	20	21	28	29 30	) 31 32
	Maxim	num Score	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1 1	. 1	1									
	Weigh	nt of items	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1 1	. 1	1									
	<u> </u>	rades	1	1	1	1	1	1	1	1	1 1	1	1	1	1	1	1	1 1	. 1	1									
Ime	2910	5		1	0	1	0	1	1	1	1 0	1	1	1	0	0	0	0 0		-									
eet	1762	4.5		0		1	0	1	0	0	1 1	1	0	1	0	1	0	1 0	) 0	1									
oor	8240	8.5		1	1	1	1	1	1	1	1 1	1	1	1	0	1	1	1 1	. 0									_	
ots	5247	6		1	1	1	1	1	1	0	0 1	0	1	1	0	1	0	0 1	. 0	0									
raa	6637	6.5		1	0	1	0	1	1	1	1 1	1	1	1	0	1	0	0 1	. 0	1		_							
rou	7291	6.5		1	0	1	0	1	1	1	1 0	1	0	1	0	0	1	1 1	. 1	1		_							
anj	5067	5	0	1	0	1	1	0	1	0	0 1	1	1	1	0	1	0	0 1	. 0	0								_	
ana	9315	4		0	0	1	0	1	1	1	1 0	0	1	0	0	-	0	0 0	) 0	1		_						_	
aar eijo	5055	5	0	1	0	1	0	1	1	1	1 0	1	1	1	0	•	0	0 0	) 0	1		_						_	
eijo	1445	5		0	0	1	0	1	1	1	1 0	1	0	1	0	0	0	1 1	. 0	1		_							
iller	9785	6.5		1	0	1	0	1	1	0	1 1	1	1	1	0	1	1	0 1	. 0	1		_						_	
ulz	5999	6.5		0	1	1	0	1	1	1	0 0	1	1	1	0	1	1	0 1	. 1	1		_						_	
uχ	3264	7		0	0	1	1	1	1	1	1 1	1	1	1	0	0	0	1 1	. 1	1		_						_	
ans eld	0078	6		1	0	1	0	1	1	0	1 1	1	0	1	0	1	1	1 1	. 0	0		_							
	1069	7.5		1	0	1	1	1	1	1	1 1	1	1	1	0	0	1	0 1	. 0	1		_						_	
em	6707	6.5		1	1	1	1	1	1	1	1 1	1	1	1	0	-	0	0 0	0 0			_	_					_	$ \rightarrow $
laa	8875	6.5		1	1	1	0	1	~	0	1 1	1	1	1	0		0	0 1	. 1	1		_	-					_	
a, H	7944	6.5	0	1	0	1	1	0	1	0	1 1	1	1	1	0	1	0	0 1	. 1	1									

In this tab we encounter the following:

Name	Description
Name	Name of the student
Student ID	ID number of the student
Items	Scores for the individual items by the individual students
Grades	Automatically computed grades (scale 0-10)
Total	Total score

## Analysis

Both a textual and graphical presentation of the analysis of the exam.

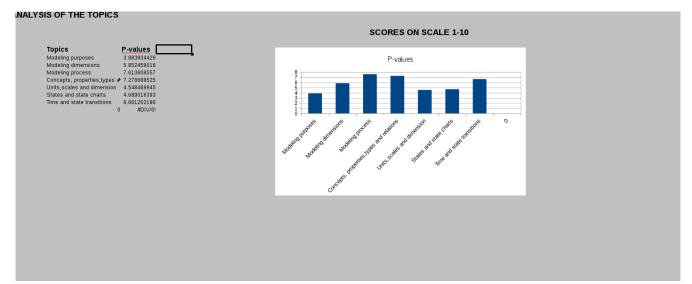
We present the distribution of the scores, the variance, standard deviation, mean score mean grade, Crombach-alpha and Standard error.



For each of the item we present the mean, variance, standard deviation, p-value, rit-value and rir-value.

## Analysis of the topics

We present the mean scores for each of the topics.



## Topic 1 up to 8

Data sheet for each of the topics.

## Comments

Here we find the mean scores of the students on the various topics. It is this sheet that we use to mail students feedback on their performance on the test.

AME ID	Email	Grade	Mod	eling pu•Mode	eling dim•Modeli	ng process Conce	epts, prop•Units,	scales and ⊧States	and state + Time a	nd state tra	0
VERAGE			5.8	3.9	5.9	7.6	7.3	4.5	4.7	6.7	#DIV/0!
lmeki		ers@\$	5	3.3	5	10	7.5	3.3	0	5	#DIV/0!
eekm		@stud•	4.5	0	5	3.3	7.5	6.7	3.3	5	#DIV/0!
oon, E		ient.tu	8.5	6.7	10	10	10	6.7	10	5	#DIV/0!
ots, C		tuden	6	10	10	6.7	5	6.7	3.3	0	#DIV/0!
raak,		∮stude	6.5	3.3	5	10	10	6.7	3.3	5	#DIV/0!
rouwe	we	er@st	6.5	3.3	5	10	5	3.3	10	10	#DIV/0!
anjels	s@	∮stud∲	5	3.3	10	3.3	7.5	6.7	3.3	0	#DIV/0!
anzev		winke	4	0	5	10	5	3.3	0	5	#DIV/0!
aande	nd	iel@s <b>Þ</b>	5	3.3	5	10	7.5	3.3	0	5	#DIV/0!
eijder	eijo	den@)	5	0	5	10	5	3.3	6.7	5	#DIV/0!
illena	aai	r@stu>	6.5	3.3	5	6.7	10	6.7	6.7	5	#DIV/0!
ulzeb	os	@stu#	6.5	3.3	5	10	5	6.7	6.7	10	#DIV/0!
uyghe	)e(	@stud	7	0	10	10	10	3.3	6.7	10	#DIV/0!
มกรรย	ser	n.1@\$	6	3.3	5	6.7	7.5	6.7	10	0	#DIV/0!
elder,	r@	stude	7.5	6.7	10	10	10	3.3	6.7	5	#DIV/0!
emen	ad	le@st	6.5	6.7	10	10	10	3.3	0	5	#DIV/0!
laass	en	@stu#	6.5	6.7	5	6.7	10	3.3	3.3	10	#DIV/0!
a, H.N	ud	ent.tu•	6.5	3.3	10	3.3	10	6.7	3.3	10	#DIV/0!
ppedi	@s	studer	6	3.3	5	6.7	10	3.3	6.7	5	#DIV/0!
tter, L	9s	tuden	5.5	3.3	5	6.7	7.5	0	6.7	10	#DIV/0!
eels,	a) s	tuden	6.5	3.3	5	10	10	3.3	3.3	10	#DIV/0!
ittens	ens	s@sti	5.5	3.3	5	10	5	6.7	3.3	5	#DIV/0!
eijnde	ers	s@stu	8	3.3	10	10	10	3.3	10	10	#DIV/0!
ooij, N	stu	udent.	7.5	3.3	10	10	7.5	6.7	6.7	10	#DIV/0!
choor	bor	nderw	7.5	6.7	10	6.7	10	6.7	6.7	5	#DIV/0!
helose	los	sen@	5.5	6.7	10	10	5	3.3	3.3	0	#DIV/0!
erbun	nte	@stud	6.5	3.3	5	10	7.5	6.7	6.7	5	#DIV/0!
erhag	ne	∮stud∉	4.5	3.3	5	10	7.5	0	0	5	#DIV/0!
erhoe	n@	⊚stud∳	6	0	10	10	10	3.3	0	10	#DIV/0!
/erkm		n@sti	6.5	6.7	0	10	10	3.3	6.7	5	#DIV/0!
itveld		studer	5	6.7	0	10	7.5	0	6.7	0	#DIV/0!
listra,		stude	6	6.7	10	6.7	2.5	6.7	6.7	5	#DIV/0!
euwe		en@st	6.5	3.3	5	6.7	10	6.7	3.3	10	#DIV/0!
									2.10		

## Emails

List of IDs with corresponding email addresses. These have to be provided and are then automatically inserted in the Comments-tab.

91129	tue.nl								
95550	dent.tue.nl								
95435	student.tue.nl								
95811	tudent tue nl								
96223	tudent.tue.nl								
95381	ent.tue.nl								
96285	ent.tue.nl								
96725	ent.tue.nl								
90458	ent.tue.nl								
97817	student tue ni								
93736	udent.tue.nl								
95902	ent.tue.nl								
95064	it.tue.nl								
94458	dent.tue.nl								
97849	ue.nl								
93587	nt.tue.nl								
88747	<u>ie.nl</u>								
95361	tue ni								
88700	dent tue ni								
94148	dent tue ni								
91655	on@hotmail.com								
91023	t.tue.nl								
95022	t.tue.nl								
95347	ue.nl								
96646	udent tue ni								
66302	ident.tue.nl								
95520	dent.tue.nl								
96025	nt.tue.nl								
93878	ue.nl								
95909	<u>t.tue.nl</u>								
96808	student.tue.nl								
94925	ent.tue.nl								
97096	nt.tue.nl								
95758	tue.nl								
93941	student tue ni								
96454	2.01								
04004	Sotudant tua ni								