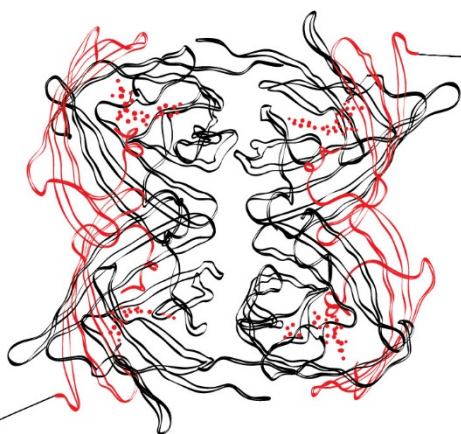
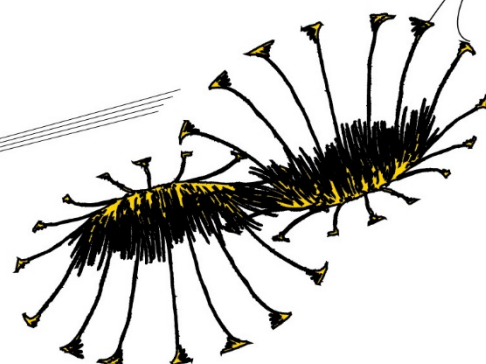




ANNUAL REPORT 2019

Examination of Board Mechanical Engineering &
Sustainable Energy Technology



COLOFON

EXAMINATION BOARD

Mechanical Engineering & Sustainable Energy Technology

DATE

14 December 2020

AUTHORS

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PREFACE

In this annual report, the Examination Board of the Bsc & MSc programs Mechanical Engineering (ME) and the MSc program Sustainable Energy Technology (SET) summarizes and accounts for its activities over the calendar year 2019. This annual report is based on factual and verifiable information, but not traceable to individuals.

ABBREVIATIONS

BSA	Bindend studieadvies - binding study recommendation
BSc	Bachelor of Science
EC	European Credits as defined in the ECTS
ECTS	European Credit Transfer and Accumulation System
EEMCS	Faculty of Electrical Engineering, Mathematics and Computer Science
ET	Faculty of Engineering Technology
EWI	Faculteit Elektrotechniek, Wiskunde en Informatica – Faculty EEMCS
FQ	Final Qualification
ILO	Intended Learning Objective
ME	Mechanical Engineering
MSc	Master of Science
NVAO	Nederlands-Vlaamse Accreditatieorganisatie – Accreditation Organisation of the Netherlands and Flanders
EER	Education and Examination Regulation
SET	Sustainable Energy Technology
SEQ	Senior Examination Qualification
UT	University of Twente
VU	Vrije Universiteit Amsterdam
WHW	Wet op het hoger onderwijs en wetenschappelijk onderzoek – (The Dutch Act on) Higher Education and Scientific Research Act

CONTENTS

1	GENERAL INFORMATION	5
1.1	Members of the Examination Board and those involved	5
1.2	Capacities, tasks and responsibilities of the Examination Board	6
1.3	Mandates	6
1.4	Documentation and archiving	6
1.5	Website	6
1.6	Improving the skills and expertise of the Examination Board	6
2	ACTIVITIES OF THE EXAMINATION BOARD 2019	7
2.1	Meetings 2019	7
2.2	Student request, complaints and cases of fraud	7
2.2.1	Requests	7
2.2.2	Complaints	8
2.2.3	Fraud cases	8
2.3	New BSc Mechanical Engineering at VU in Amsterdam	8
2.4	Institutional audit aimed the assurance for educational quality (ITK)	9
2.5	Participation in UT Platform Examination Boards	9
2.6	Diploma's and cum laude	9
3	SELF-EVALUATION & OUTLOOK TO 2020	10
3.1	Self-evaluation 2019	10
3.2	Outlook to 2020	10

1 GENERAL INFORMATION

1.1 Members of the Examination Board and those involved

As of 1 January 2019, the following persons are no longer members of the Examination Board ME/SET, and were, as planned, relieved of their duties:

- Prof.dr.ir. A. de Boer (secretary)
- Dr.ir. G.C. Vreman-de Olde (external member)

And, the following persons were appointed as member of the Examination Board ME/SET, on 1 January 2019:

- Ir. H. Tragter (secretary)
- Drs. M. de Haan (external member)

Hence, as of 1 January 2019, up to and including 31 December 2019, the members of the Examination Board ME/SET were:

- prof.dr.ir. G.R.B.E Römer (chairman)
- prof.dr.ir. A.H. van den Boogaard (vice-chairman)
- ir H. Tragter (secretary)
- dr.ir. A.K. Pozarlik
- drs. M. de Haan (external member)

In 2019, advisers of the Examination Board ME/SET were:

- drs. E.M. Gommer (program director ME)
- dr.ir. J.B.W. Kok (program director SET)
- dr.ir. P.C. Roos ("quarter maker" VU-UT-ME)
- dr.ir. G.G.M. Stoffels (bachelor coordinator ME)
- A.F. Heutink (master coordinator ME)
- K.G.M. Braakhuis LLM (master coordinator SET)
- J.G.M. Kemna (pre-master coordinator ME)
- Drs. D.A.C. Paquaij (study adviser ME B1)
- ir. J.G. de Kiewit (study adviser ME B2 & B3)
- ir. M.J.B. Duyvestijn (study advisor master ME en SET)
- J.C.T. de Schutter, MSc (study advisor and coordinator VU-UT-ME)
- B.G.F. Pol (VU-UT-ME)

In 2019, Examination Board ME/SET was supported in administrative matters by:

- B.M. Holtkamp-Marti (minutes)
- A.J. Oppers-van den Berg (decision list)

1.2 Capacities, tasks and responsibilities of the Examination Board

As laid down in the Dutch Act on Higher Education and Scientific Research (WHW, article 7.12), capacities, tasks and responsibilities are assigned to the Examination Board of ME/SET and is appointed by the dean of the Faculty of Engineering Technology (ET). Additional capacities, tasks and responsibilities of the Examination Board ME/SET are laid down in the Education and Examination Regulations (EERs) of the (BSc and MSc) ME programs and of in the EER of the MSc SET program. As such, the Examination Board determines whether a student meets the Final Qualifications (FQs) of the ME and SET programs and therefore can safeguard the quality of the diplomas of programs. The capacities, tasks and responsibilities of the Examination Board ME/SET include, but are not limited to:

- quality assurance of exams test plans,
- appointment of examiners,
- decisions regarding requests of students regarding an individual course program, or a deviating course program, based on and in accordance with rules in the EER,
- signing diploma's,
- establishing and monitoring Binding Study recommendation (BSA) of first year students,
- handling requests and complaints of students (see section 2.2),
- handling (suspected) fraud cases (see section 2.2).

1.3 Mandates

The Examination Board has delegated well defined tasks to other officials in the organization of the Faculty of Engineering Technology (ET) and the University of Twente (UT), to handle standard (student) requests, complaints and situations that require standard and quick decisions. Mandates are documented in writing and archived. All decisions made by mandated staff are presented and discussed by the secretary at the meetings of the Examination Board by means of a "decision list". All non-mandated decisions are made by the Examination Board.

1.4 Documentation and archiving

Minutes, agenda's, and other documents, such as mandates and decisions of the Examination Board are archived by the secretary of the Examination Board on the shared computer P-drive (server) of the University of Twente, with restricted access only for members of the Examination Board. Decisions of the Examination Board are documented either in the minutes of the meetings of the of the Examination Board or in the so-called "decision list" (see section 1.3). Also, this list is archived.

1.5 Website

General information of the Examination Board, such as its members, rules and guidelines which are in place, guidelines for lecturers, annual reports, as well as guidelines on how to approach the board, are published on-line at:

<https://www.utwente.nl/en/bscme/organisation/Examination%20Board/>

1.6 Improving the skills and expertise of the Examination Board

In 2019, drs. M. de Haan enrolled in the Senior Examination Qualification trajectory (SEQ) aimed at, amongst others, members of the Examination Boards. The knowledge obtained will be used for

quality assurance by evaluation of rules and procedures in place in the programs of ME and SET, as well as to continue the Board's process of test-quality assessments.

2 ACTIVITIES OF THE EXAMINATION BOARD 2019

This section provides a brief overview of a few major advisory and policy-related tasks that the Examination Board, in addition to its regular tasks, fulfilled in 2019

2.1 Meetings 2019

The examination board ME/SET has had eight meetings in 2019, namely on 28-01-2019, 11-02-2019, 11-04-2019, 06-06-2019, 20-06-2019, 28-08-2019, 14-10-2019 and 11-12-2018.

2.2 Student request, complaints and cases of fraud

In 2019, the Examination Board has processed multiple student requests, including but not limited to requests for an extra examination or resit, requests for an exemption and requests for a non-standard study-program. Table 1 provides an overview. This table also lists a number of fraud cases, which have been dealt with.

Table 1. Overview of requests, complaints and fraud cases dealt by the Examination Board

Requests	remark	received	approved
examination	BSc extra resit	11	11
-	MSc extra resit, extra time ...	12	9
exemption	50% regarding internship	13	8
admission	to master or pre-master	7	6
course list	non-standard course list for the master	17	17
-	replace internship with courses	13	11
planning	BSc early start of ARS or B-assignment (BSc)	20	20
-	MSc start internship with less than 40EC	6	2
-	MSc start of master assignment without all courses	7	5
others	e.g. exchange, double master program, ...	22	18
Complaints			
examinations	one general (50 students) + two individual cases	3	1
tutoring	a group of four students	1	1
Fraud			
5 cases	involved 25 students	5	2

2.2.1 Requests

The Examination Board has processed multiple student requests, such as requests for an extra examination or a resit, exemption and non-regular study-programs. Analysis of the requests listed in table 1 shows that most requests can be attributed to "planning issues" by students. That is, for BSc students these "planning issues" are requests to start with the course *Academic Research Skills* and/or to start the Bachelor assignment, although the student has not (yet) acquired the

minimum number of study points (EC's) and a selected set of particular subjects (courses), which are considered "essential" have not yet been passed. In the case the student these requests are typically rejected, when the student can still work on other subjects/courses. This also avoid (further) delay of the student in his/her program. In the case of requests from master students, requests due to "planning issues" are related to the start the *Internship* or the start the *Master assignment*, although the student has not acquired the minimum number of study point (EC's). For both, bachelor and master students, the rules of the Examination Board are in place to improve study efficiency of students. That is, to reduce the student's "residence time".

The second most frequent requests to the Examination Board are related to specific exams, as well as the desire of students for more exam options or resits (11+12=23 received, 20 approved, see table 1). The Examination Board is reluctant in approving extra exam options and resits in order to reduce the workload on (already overloaded) lecturers. Therefore, student requests are only granted if a denying a request has a severe impact on the student's study progress (delay of 3 months or more).

In 2019, the third most frequent request involves requests, from master students, involved requests for approval of a "deviating" master course list/program. This relative high number of requests can be attributed to the fact that ME program will introduce new master tracks—referred to as *specialization tracks*—, soon. In these tracks, students will have ample (so more) room for other (elective) courses, than is the case in the current master tracks. The Examination Board decided to approve these request (only) if they meet the rules of the new master specializations. Therefore, these requests will only occur in the transition period up to the formal start/introduction of the new specialization tracks, next year.

2.2.2 Complaints

The Examination Board received four complaints from two individuals and from two groups of students, varying from complaints about unavailable supervising teachers to discontentment about exams.

2.2.3 Fraud cases

Eight cases of suspicion of fraud were reported by examiners. The examination board judged fraud proven in three of these cases.

2.3 New BSc Mechanical Engineering at VU in Amsterdam

In 2019 the University of Twente and the Vrije Universiteit (VU) in Amsterdam, started the development of a "satellite" BSc program in Mechanical Engineering to be taught at the VU in Amsterdam, starting in September 2019. Several topical development teams of, mainly lecturers from the University of Twente, under the lead of dr.ir. P.C. Roos ("Quarter Master" of UT/VU-ME BSc program) developed an ME curriculum and schedule, which deviated, not more than 20%, on some aspects from the ME curriculum and schedule of the program as taught in Enschede. Hence, the Examination Board ME/SET, was keen on monitoring the updated "learning lines" at the VU in order to ensure that the BSc ME at the VU met the *Intended Learning Objectives* (ILOs) and *Final Qualifications* (FQs) of the BSc ME as defined in the BSc program in Enschede. To that end, the development teams provided detailed learning objectives and test plans on course-level, block-level, semester-level and year level, as well as an overview on how these contribute to the FQ of the ME program. These plans and documents were discussed in meetings with Examination Board, which approved the program, after some recommended changes were implemented.

2.4 Institutional audit aimed the assurance for educational quality (ITK)

In November and December 2019, the Accreditation Organisation of the Netherlands and Flanders (NVAO), a quality assurance agency that safeguards the quality of higher education in the Netherlands and Flanders, carried out an institutional audit aimed the assurance for educational quality (*Instellingstoets kwaliteitszorg*, ITK), as well as for the assessment of the plans for the quality agreements that have been requested by the Minister of Education, Culture and Science. The Examination Board ME/SET contributed to this audit by providing records of the Board, as well as by discussions with the assessment panel, together with other members of Examination Boards of other programs taught at the University of Twente. In their preliminary feedback, the assessment panel were very positive about the outcomes of the conversations and indicated that the university had more than met the standards relating to education and educational quality. A final assessment report of the NVAO is expected in the first quarter of 2020.

2.5 Participation in UT Platform Examination Boards

The Chair of the Examination Board ME/SET participates in meetings of the University wide *Platform of Examination Boards*. Chaired by prof. dr. T. Bondarouk (chair Examination board of Behavioral Management Sciences, BMS) and prof.dr. A.A. Stoorvogel (Chair of the examination boards of faculty Electrical Engineering, Mathematics and Computer Science, EEMCS) this platform regularly discusses best practices of/for Examination Boards, as well as aims at harmonizing rules and guidelines of examinations and quality assurance, which overarch the various educational programs at the University of Twente. In 2019, one of the topics discussed what harmonizing annual reports of the various Examination Boards.

2.6 Diploma's and cum laude

Table 2 provides an overview of the number of students who were awarded a Bsc or Msc degree, as well as the number of students who have received a cum laude degree—i.e. a “with distinction” on their BSc or MSc diploma. As can be concluded from this table, between 0% and 6% of the ME students were awarded a cum laude degree, whereas this percentage varied between 9% to 19% for SET students. The latter, is higher than the targeted maximum between 5% to 10%, but can be attributed to the statistically low number of graduates and laureates of this program.

Table 2: Number of diploma's and cum laude distinctions

	BSc ME/cum laude	MSc ME /cum laude	MSc SET /cum laude
2018	84* / 4	127* / 8	16* / 3
2019	73* / 0	152* / 7	22* / 2

*total including cum laude graduations (i.e. with distinction).

3 SELF-EVALUATION & OUTLOOK TO 2020

Each year the ME / SET Examination Board evaluates its own functioning and formulates aspects to work on for the coming calendar year.

3.1 Self-evaluation 2019

By the end of 2018, the Examination Board planned to address, in 2019:

- drawing up all its documentation and communication in English. This was accomplished.
- drawing up, as well as updating the list of examiners per course subject, in order to allow the educational support services (such as the Examination Office and the Educational Affairs Office) to perform their tasks better. This was accomplished
- drawing up annual statistics on the number and nature of student requests, complaints, fraud etc. in the annual report. This was accomplished (see section 2.2).

3.2 Outlook to 2020

In 2020, the Examination Board plans to address the following:

- an elaborate self-evaluation of the Examination Board on its performance regarding its tasks and obligations, guided by an external expert,
- statistical analysis on the performance of foreign students, originating from outside Europe, as there are signs that these students underperform, when compared to European and Dutch students,
- continue the evaluation of tests and test plans in Modules of the BSC program ME, as was initiated earlier.