

Taylor Vision

1st semester



About us

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Edition

End of year 2016

History

Taylor is the study association related to the department Precision and Microsystems Engineering of DelftUniversity of Technology. The association was founded in 1988 to enhance the study experience of the students. The Taylor Foundation, in its legal form, was subsequently founded in 1992, making it an official organ in the TU Delft. During this time, the department changed its name from “Production Engineering” to the PME you are all familiar with.

In contrast to what many people think, Taylor is not named after the famous mathematician known for the Taylor expansion. It is named after the mechanical engineer Frederick Winslow Taylor, who was active in production engineering and industrial efficiency.

The logo of Taylor was inspired by the tip of an Atomic Force Microscope, an instrument that requires technology from all the divisions of the department.

Taylor aims enhances the study experience of the students by: trying to improve the relation between the students and the department staff, bringing the students in contact with the industry, providing the department with student feedback about courses and, last but not least, organizing recreational events to de-stress from the hard working life as a PME student.

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From the board

Dear reader,

Already two months have passed since the last edition of the Taylor Vision. In the meantime, many exciting things have happened in our lively department. First of all, our beloved Urs Stauer has stepped down from his position as head of department to make more time for research. None other than Just Herder has risen to the challenge to become the new leader of PME. Given his new position we have interviewed Just and asked him what his plans and ambitions are for PME in the coming years. Furthermore, the master track precision and microsystems engineering has been renamed to high-tech engineering and another master track with the name optomechatronics has been added. Therefore, the department (which will retain the name of PME) now houses two master tracks. Moreover, this indirectly means that Taylor has received an upgrade from a “track-association” to a “department-association”!

Once again, it has been a busy time for the people of PME. For the students this came in the form of examinations for the infamous courses of physics & measurements, mechatronic system design and nonlinear mechanics. Luckily, there was a week of vacation directly after the examinations, which many of us used to go skiing. To welcome everyone back after this week, an après-ski themed reception was organized where people could share the stories behind their freshly obtained tans.

This may be a good time to realize that already a full semester has passed (“time flies when having fun”) and we have reached the half-way point of this academic year. For us this also means that half of our year on the board of Taylor is already past us. In the past half year we have had the chance to organize many events ranging from excursions to receptions. Especially the gratitude and enthusiastic responses from you, the people of PME, has made being on the board of Taylor a wonderful experience. In the next half year we will face our biggest challenge yet in the form of organizing the Taylor Trip to Japan. On top of that, two of our board members will leave Delft to fulfill their internships elsewhere.

As for the trip, preparations have already started. The application period has ended and due to the limited number of spots a selection had to be made. We would like to thank all the applicants for their original motivational letters and pictures. In the meantime we are approaching companies to arrange the excursions during the trip. In order to help us with the arrangements and give us some room for our own studies, a commission was appointed for the trip.

In this edition of the Taylor Vision we will take you back to the Christmas gathering, report on the lunch lectures of TMC, PM bearings and CCM, the Python workshop and list the latest PME news. Furthermore, a student shares his “study abroad” experience and a brand new brain-teasing riddle will be provided. We hope that you will have as much joy in reading this edition as we had writing and composing it.

Truly yours,



Thijs Willem Albert Blad
Chairman of the XXIVth Taylor board



PME news

High-tech Engineering

We are pleased to announce that our beloved track is getting a brand-new name! High tech engineering will be the new name of the former precision and microsystems engineering track. The reasoning behind this name change is the image that bachelor students have when they see the name precision and microsystems engineering, mainly the micro in the name points them in the direction of nanotechnology. This is and will always be a part of PME but it is much more than that as we all know. With this new name, we hope to set things right and give potential master students a better image of the track. The PME department name will remain the same. Besides this we are also glad to announce that there will be another track within the PME department. As of September 2017, the track Opto-mechatronics will be available at the PME department. As there is no responsible professor yet please contact Eveline for more information about this track. Taylor will remain the master dispute of the department so we will take care of the HTE and OM students.



Recent graduates

The following students have recently graduated from PME, congratulations to all!

Sebastian Wezenbeek, specialisation: EM
Modeling of a Reverberation Chamber and Acoustic Control

Mathieu Wernsen, specialisation: EM
Observability and Transferability of In-situ Blocked Force Characterisation

Joep Nijssen, specialisation: MSD
A Type Synthesis Approach to Compliant Shell Mechanisms

Marc Hulsebos, specialisation: MSD
The Design of a Ceramic Chuck with Integrated Mirrors

Steven Klaassen, specialisation: EM
Towards Hybrid Modular Design of Structural Dynamic Models

Martijn Stolk, specialisation: EM
A Substructuring Method to Apply Topology Optimization to System-Component Problems

Martijn van Boven, specialisation: EM
Dynamic Response Optimization of an Acoustic Guitar

Gijs Bruining, specialisation: MSD
Design of a 2DOF Eye-scanning Device

Tobias cheepers, specialisation: MSD
Linear Induction Machines for Planar Positioning

Pieter Smorenberg, specialisation: EM
Constructing Compliant Mechanisms for Optical Mounts with Topology Optimization

Thijs Overwijk, specialisation: MSD
The Influence of Static Balancing on the Dynamic Performance of Parallel Manipulators

Len van Moorsel, specialisation: MSD
A Planar Precision Stage using a Single Image Sensor

Joost Kortleve, specialisation: MSD
Impact Drive Mechanism with Nanometer Precision, actuated by a Pulse Generating Voice-Coil Motor

Bas Fellingner, specialisation: MSD
Validation of the In-plane Friction Behaviour of a Ferrofluid Bearing

Thomas Scholten, specialisation: EM
A Practical Application of Topology Optimization for Heat Transfer and Fluid Dynamics

Bart Joziassse, specialisation: MSD
Nanometer Precision Scanning Dual Stage with Reduced Joule Heating in the Fine Stage Actuator

WHAT WILL BE YOUR NEXT STEP?

TMC is a unique collection of self-starting, highly skilled and almost self-employed technical professionals. Our unparalleled Employeneurship model offers engineers from all backgrounds the comforts of employment and the opportunities of entrepreneurship.

Are you a highly educated, young professional with an entrepreneurial spirit and do you want to be captain of your own career? Visit our website! Here you will find more information about our unique Employeneurship model and our vacancies.

Activities

TMC lunch lecture

Following a week after the Huisman excursion, the last lunch lecture of 2016 was held on December 13. This time, the presentation was given by our very own Jeroen Karregat of TMC, who graduated from the PME department in 2014. Once everyone had their famous Leo sandwich, the lecture could begin.

Jeroen gave a presentation about mechatronic system design in heavy-duty automated vehicles. To be more precise: how do you design a mechatronic system in which a row of trucks can drive in an automated way on the highway? After a brief introduction of the philosophy of the TMC company, Jeroen showed his approach on how to design such a system and the many challenges he faced while designing it. For example, one of the challenges was how to deal with the delay each truck experiences when the truck in front hits the brakes. Impressive results of the design project were shown during the lecture. The trucks could safely follow each other on a straight road with a time gap of 0.3-0.5 seconds, even when an emergency stop was made by the truck in front. Some problems however still have to be dealt with, like how the system should be adapted to allow cars to merge on the highway when a row of trucks is blocking the lane.

For many students, this lunch lecture gave a nice insight in the practical use of the mechatronic system design course. It was great to see the theory come into practice, and also to see the kind of project a PME student can work on right after he or she graduated.

Justin Smid



Activities

PM-Bearings lunch lecture

During the PME lunch lecture on February the 22nd, Mathys te Wierik and Jan Willem Ridderinkhof presented the company PM Bearings to a group of over 50 interested PME students. PM Bearings is a dynamic and rapid growing company that employs 140 people and is located in Dedemsvaart. The core products of PM Bearings are linear and circular bearings which are designed for use in the high-tech industry. The bearings are designed, manufactured and assembled entirely in-house, such that good control over the quality guaranteed. A good measure of this quality is the fact that some of the bearings have a straightness/flatness of 2 micrometres per metre. To use these accurate bearings to their full potential various steps forward have been made throughout history. At present day, PM-Bearings not only offers the expertise to design and manufacture the bearing's interfacing parts, but also the expertise to construct completely integrated motion systems. Topics such as structural mechanics, dynamics and mechatronic system design are all part of the design of such an integrated motion system. With completely integrated systems, the market's growing requirements for ever higher precision are satisfied.

Because of both the expansion of the PM Bearings facilities and the growing demand for high-end specifications, PM Bearings decided to set up an R&D department. After Mathys graduated in ME PME at the TU Delft a year ago, he started to work in this department as an R&D engineer. He set up some R&D projects to improve the dynamic performance of stages. One of the projects is the design of a Multibody Dynamics-/Control model. Using this model, positioning errors and settling times of complex systems can be predicted. The model was verified on existing systems by carrying out measurements. The experiments correlated well with the modelling results in terms of both error amplitude and settling time. The second project is about the reduction of mass of moving parts. The mass is reduced by using topology optimization that include manufacturing constraints.

In cooperation with the Taylor dispute, PM Bearings organizes a company visit for PME students at the 8th of June. So if you want to see the process of engineering and producing high quality bearings and stages, save the date! During this trip there will be a nice tour through the entire PM factory and an interesting case to work on. During the tour, the creation of high-tech bearings will be shown. The engineering department, the milling machines, the hardening ovens and a state-of-the-art cleanroom will be shown. Join the tour and see the PME playground in the PM Bearings facility.

Ad Huisjes

Activities

Python workshop

In case you might be wondering what an anaconda could be doing on Jupiter, I could mention it might be looking for its python friend, but then I would be lying, they seem to be well integrated already.

11th of January 2017 was the day the legendary python workshop took place. Next to it being informative and giving the participants a head start in programming in python, it also had a little bit of a persuasive character.

No compiling, a broad supporting community, free of charge and it looks almost like plain English. Does not sound all too bad does it? I love being around people who question this attitude before giving in. And yes, that happened. It led to interesting discussions, and with that came a better understanding of the situation. The main point was that compiling languages can execute the program faster. Which is true, but python appeared to be fast enough and in return it offers a better flexibility since one does not have to wait for the compilation to happen.

Also, you might be wondering what Jupiter has to do with a python and an anaconda. Basically Jupyter is an application in which the python code can be written and executed, together with guiding comment “blocks”. These make it look like a nice document in the end. Anaconda is, for as far as I understood, the mom snake keeping her babies safe. Including the Jupyter notebook, but also Mr. python. For more information on that matter though, you better checkout Google ;).

In the end, I left with a happy feeling and a reasonable understanding and readily available knowledge of programming in python as to start my personal trip in this language. I think we all did, so hereby a special thanks to Alejandro Aragón and Jaap Kokorian who handed us the handles to open the drawers of experience. And with that I would like to close it off!

Hang loose,

Cees van der Geer





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Activities

CCM lunch lecture

On the first of March we were treated with a lunch lecture given by Joep Kooijman and Ronald Melenhorst, both system designers for Sioux CCM. Originally being a stand-alone company called CCM, standing for Centre for Concepts in Mechatronics, they joined forces in 2014 with the Sioux group. Together they form a strong innovative technology partner, with over 450 multi-disciplinary engineers. Having a strong focus on mechatronics, they have a lot of experience in inventing original concepts but they are also capable of realizing the entire development process up to a finished product, small series production or installed production equipment.

The first part of the lecture was given by Ronald Melenhorst. He focused on the projects he had worked on, and which companies these projects were for. In the 10 years he has worked for CCM, this added up to a staggering amount of projects, also for big companies like ASML and Philips. After his talk there was already an opportunity for questions, but most of us were still enjoying our delicious Leo sandwich.

In the second part of the lecture Joep Kooijman, who studied Systems & Control at the TU Delft, told about his experiences at CCM. Joep has been working under the title System Designer Mechatronics at CCM for 2 years now, and he brought an interesting project to talk about. The remainder of the lecture we were taught about 'Accurate foil steering in high speed applications by bending'. Using this particular project, Joep was able to convey the extent to which CCM is able to deliver innovative solutions.

At the end of the lecture there was room for answering some questions. The discussion led to some good tips for applying and working at a company. The first tip by Joep was to ask with whom you are going to work with and who your supervisor will be, so you can do some research on the people you will work with and see if this is a good fit for you. The second tip, by Ronald, was to keep asking yourself on a yearly basis if the company is still a good fit for you, and vice versa.

Thank you Ronald and Joep for your enthusiasm and an inspiring lunch lecture!

Richard Pleeing

PME Gathering

On December the 16th, it was time to celebrate the holidays with our colleagues during the P&ME Christmas gathering. A day filled with presentations, competitions and music to conclude another great year at PME. In this article we will look back at a great day in the Art Centre.

Evaluation

After the opening speech given by Urs the 1st year students went upstairs to a cosy meeting room where a course evaluation of the courses of quarter 1 was held. This was different from the course evaluation held by Taylor since the students could go into discussion with the professors. The major points in this discussion were the pros and cons of having assignments during the course as mandatory or as exercises and gaining a bonus or not. As usual the discussion took more time than planned and Hans only had a short time to explain the graduation trajectory of the students in the second year. This however is a very important aspect and the students should start with this as soon as they have a clear picture of what they would like to do. The different forms of the graduation like internship, literature study and thesis were discussed as well for either a graduation at the university or at an external company.

Pubquiz

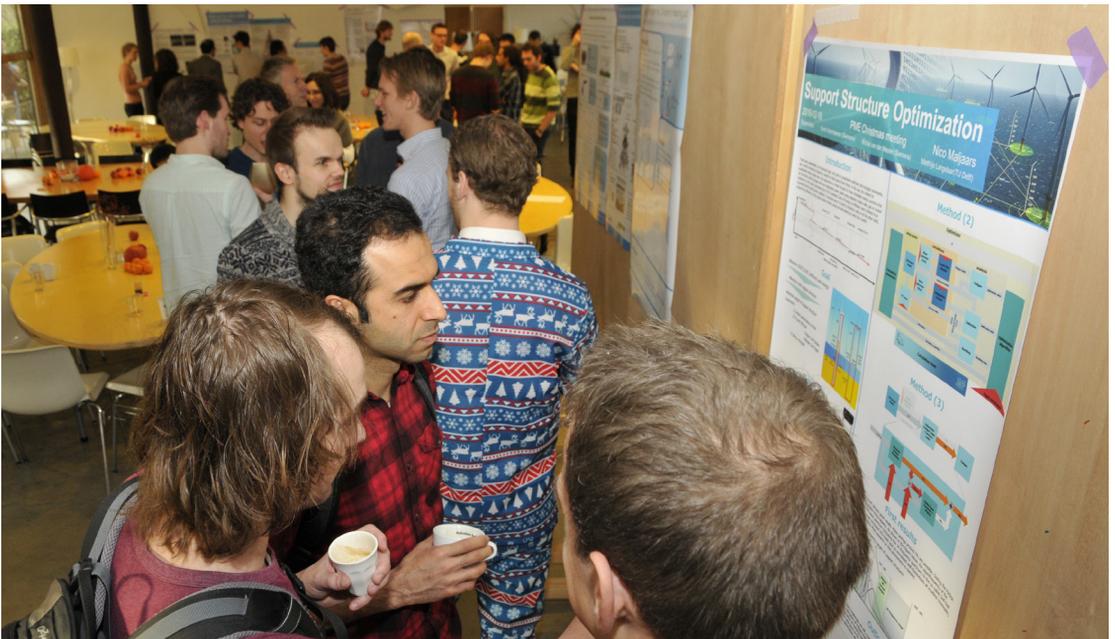
There were also some people at the gathering who didn't fit the groups named above. For this group a pub quiz was organized. Divided in little groups, they had to answer various question about history, general knowledge, movies, music, TU Delft and of course science. The last part of the quiz were some hard riddle which needed to be answered within 2 minutes each. The only way to answer this riddles was to think outside of the box. At the end there were two teams with the same amount of points. In order to determine the winner, an impossible question was asked. The group closest to the correct answer won a nice price!



PME Gathering

Poster pitch

During the poster session the graduate students of PME had the possibility to show off their research. First, the students received two short workshops on giving pitch presentations and poster design. Next, the students could claim their spot in a large info market setting and test their recently updated presentation skills on the audience that walked by. The audience, which was composed of students, PhD's and staff, was given stickers that could be awarded to the best posters and presenters. After about an hour of enthusiastic pitches the voting closed and the two prizes were awarded. The audience prize for most collected stickers was won by Thijs Blad with his research on the “Energy Harvester for Children’s Hearing Aid”. The winner of the other prize was selected by the Taylor Board and was awarded to Olivier Potma and his research to “Fluid seal for rotary shafts using ferrofluids”. Overall, the quality of the posters and presentations was very high and interesting research topics were shown by all participants.



Als jij je werk saai vindt, dan heb je kansen niet gepakt

'Bij ACE sta je zelf aan het roer van je carrière', stelt kersverse projectleider Ruud Evers. Assertiviteit wordt hier beloond.' Hij is net doorgroeid van lead engineer naar projectleider binnen de hightech business unit van ACE. Hier ging heel wat aan vooraf. Een weg van praktijk naar coachend met techniek als leidraad.

Lees het volledige verhaal en meer interessante artikelen op ons blog.



ace.eu/blog

ai
kt



Op 28 maart 2017 organiseert Holland Instrumentation bij het Corpus in Oegstgeest het jaarlijkse event ZIE 2017. Met het thema: 'Kansen en bedreigingen voor hightech in West-Nederland'.

ACE is ook dit jaar van de partij en nodigt jou uit om ons daar te bezoeken. Als keynotespreker is Jan Rothmans te gast!

Het ZIE brengt ondernemers, wetenschappers, investeerders en overheden uit West-Nederland bij elkaar en laat kansen zien voor nieuwe producten, nieuwe bedrijvigheid, netwerken en financieringsmogelijkheden. Laat je inspireren door onze sprekers en leer van hun ervaringen. Je kunt je tevens aanmelden voor de verschillende parallelsessies van: Brainport Industries, The Hague Security Delta, Clean Tech Delta, en RoboValley.

Zie ACE op  ZIE 2017

hollandinstrumentation.nl

PME Gathering

Jam Session

After the formal program and an incredible lunch, Eveline and Guido organised some fun. The Christmas gathering is, as we all know, one of the best opportunities to act crazy and get creative with all kinds of music. We started slowly and enjoyed some piano and guitar solo's and duo's of artists including Farbod, Emiel, Can, Ivan, Andre, Jimmy, Hassan and Martijn and also the less musically talented people could show their skills. It was very nice to see all of the effort that Christina and Alkisti had done making their own cover and videoclip of the song: 'Santa Claus is coming to town' and for me it was the best experience ever to rehearse and perform a dance with the boys of the Taylorboard. After this it was Stijn van Koppen who got everybody quiet with his alternative music, performed live only with his synthesizer! All of the acts were very nice to see and listen to, so when the beers and 'bitterballen' came in, many of us were inspired to join the jam session. Drums were improvised, Cees played the trumpet beautifully and I even saw some people dancing! All in all, it was a great day with many awesome surprises and I elaborated my list on who to ask for some private music concerts. What do we want more?

The Taylor board.



Camera

Gift from ASML

To capture all the great memories of the events organized by Taylor and PME our sponsor we received a very nice present from ASML. A digital SLR will help us capture the best moment at PME! Visit www.dispuuttaylor.nl/photos for pictures made with our Nikon D3300.

- 24.2 million effective pixels
- 23.5 x 15.6 CMOS-sensor
- ISO 100 – 12,800
- 3 inch TFT-Lcd-monitor



ASML



Study abroad

Japan

It has come to my attention that quite a few of you will be joining the Taylor trip to glorious Japan this summer! I have been studying in the land of the Rising Sun for four months now, and I hope my experiences and early social bloopers may be of use to you.

Let's get this out of the way first: if you're used to the way things work in the Netherlands, Japan is a little different. The difference is not huge, mind you, it's just that everything is a little different. Most of what's written below pertains mainly to Tokyo, as that's where I've been spending most of my time. Keep in mind that Tokyo is huge: compare Delft (100k inhabitants) to the Tokyo metropolitan area (13.6 million).

Let's start with trains, as these are by far the easiest and cheapest way to get around. The most noticeable difference with Dutch trains is that these actually

work. They are also a little busy during rush hour.^{np} It's a popular myth that Japanese trains are never delayed. They are. However, if the trains come once every two minutes you'll never actually have to wait long enough to be bothered. One more difference: the OV card in Japan works quickly, even if you keep it in your wallet!

Moving on to food. Japan is an expensive country, which you'll notice if you're trying to cook. Eating out, however, is comparatively cheap. An abundance of small restaurants and a culture aimed at efficiency and convenience mean an endless variety of (sort of) cheap, delicious food is never more than a corner away. Don't bother trying everything; you won't have enough time.

Beer is, unfortunately, also expensive. In a Tokyo bar it is not out of the ordinary to pay 600 yen (about 5 euro). Fortunately, I have done the legwork for you and found out about the glory that is *nomihodai*. For as low as 600 yen an hour¹ you can drink unlimited amounts of beer, sake and bad cocktails. A good thing to keep in mind is that Tokyo bars are often tiny. Bringing a large group of people will necessitate a reservation, which brings me to my next point: Get started learning Japanese.



¹ Some conditions apply. Such as a 300 yen cover charge. Oh, and you have to order two small dishes of at least 300 yen each. They'll get your money somehow.

The EF English Proficiency Index ranks average Japanese people's English as 'low proficiency', about as high as China. As Japan is one of the leading engineering nations and has a huge amount of export, this surprised me. It's true though; don't expect most Japanese people to do any more than give you directions. With that in mind, I have compiled a small list of survival phrases you will absolutely need to know.

sumimasen

'Excuse me'.

The most helpful phrase you'll ever learn. Especially useful if you need to catch a waiter's attention.

arigatou gozaimasu

'Thank you'.

You most likely know the first bit. You need the second bit though, because it's much more polite.

nihongo wa wakarimasen

'I don't understand Japanese'

Issho ni karaoke ni ikimasu ka?

'Shall we go to karaoke together?'

Japan's a wonderfully weird and absolutely beautiful country. I've had a great time here, and I'm sure you will too.

Jelmer Geerts



Get to know JUST HERDER

Why are you the new head of the department?

Good question, there is a system which rotates every few years. Urs did a fantastic job but it did cost him a lot of time and that means that there is not much time left to do research. Besides that Urs was also really looking forward to doing more research again and I guess you could say that I was next in line to be the head of the department. However if they would have asked me 1 or 2 years ago I might have been a holding back a bit more, back then I had just joined the department. I have been here for 4 years now but my first year was spent mostly on sabbatical. The MSD group had to find a new direction after Robert Munnig Schmidt left which I was very occupied with. But that has since been sorted out and is now heading in the right direction so it was a logical step for me to take on head of the department now. So I was not necessarily jumping out of my chair but I was pleasantly surprised when the opportunity occurred as it also has some nice aspects.

How does it feel like to be the head of the department?

Officially I am head of the department since the Christmas gathering but I have been feeling like it for a bit longer. There are some things about it which I really like. For example the name change of the track to High tech engineering is something which we decided on as a department and not just my decision. Some people will had to get used to it and some were convinced from the start, of course I tried to get the support from every staff member. The name of the department will remain PME and that is fine, in research it is also very clear for everyone around us. They know us as PME in research, fellow colleague's, companies and so on, for them it is clear what we do. Which was not the case for bachelor students. Micro was a pretty dominant part and precision was only enforcing this instead of the other way around as precision in my eyes is large machinery that are very precise. So this communication towards the students was not very clear. They also don't have the time to systematically check all of the master tracks due to parallel sessions with other master track presentations. So based on the name and stories of other students they have to make their first decision. So far it has turned out to be a good change as we have an increased number of applications for the master presentations. For me these kind of processes are very interesting to guide. I am not the type that just guides the department in a certain direction. To me it is more important to create an environment in which students but also staff can grow and explore their own interests. So it is vital that everyone can go in his own direction of personal development whether it is a student or a staff member. The interaction between students and staff should not be restricted only their supervisor but also the rest of department should be accessible. This is also the case for researchers of our department, they have their own thing and that is important and recognizable but

on the other hand if you can create overlap with other colleagues you can create something unique which can also be very helpful. So I always try to find a balance between individual development and the development of the department as a group.

How many meetings do you have on a daily basis?

Sometimes I don't even have time to go to the toilet so to speak. My schedule is fully packed. Around the lecture hours I always try to keep some space for questions or conversations with the students. Some times there are some questions but sometimes I forget to make time to travel to the lecture rooms. Before a lecture or meeting I always take my time to focus on the subject. Sometimes when I get out of a intensive meeting I have to give a lecture which does not always work out, I need some time to prepare even though I prepare the lecture the day before it is very important. I also try to organize an office hour and that is now unofficially in my schedule on Monday between 12 and 1, this is however a public secret (not anymore!). So in the course of time I try to schedule more flexible blocks, availability is very important as head of the department. Also conversations with fellow colleagues to solve little problems, usually this only takes a few minutes but I don't want to let wait for whole week for an appointment.

Do you have any plans for the coming years?

I want to try to change the way we practice mechanical engineering, for me it is important that they get a sort of training to ask themselves, "hey, can't I do this differently?". This doesn't necessarily have to be a better way but just different. I noticed that the more flexible you are in your approach to problems, the easier it gets to find a truly new solution. Of course we always have an idea on how to solve a problem and we are smart enough to figure out how to get it working. But by continuously searching for different approaches to problems and trying other methods we can find out the essence of the problem. Once you are familiar with this way of working you can get to different solutions to the same problem very quickly. I think this is also the role of the university, we can't do engineering better than a company as they have more knowledge and manpower for a specific product but we can do things differently and come up with new innovative solutions. And by small changes on the lower level of a design we can achieve larger changes at the top.

Do you have time for your own research?

The way you do research changes throughout your career. As a student and PhD you are for nearly 100% focussing on your own work. As you transition to a post-doc you also start to learn new skills like writing research proposals, sometimes your own but sometimes in the context of your research. And once you get a tenure track position the education becomes more important. But you also should take care of yourself and make sure you stay on track. Requesting projects and making sure you get them is one of the aspects and you also have to make sure your research is attractive to graduate students. Creating a viable research environment around yourself is a whole different kind of responsibility. Not only making sure that you have good publications in your field. So the organization of the research is becoming more important. As these things improve and you spend more time on it you also start to think about the shape of the research. For example the funds of the research, where do these come from. European projects are in that aspect very important for our network and we also have a few which are directly funded by industry. Those have a completely different character, there is no review process before the research, that is usually done by other unknown researchers which give a kind of quality mark. With a directly sponsored research that is not the case, it is just something that the industry is interested in. So at least it is socially relevant, the questions is whether this is also scientifically relevant. You have to show this indirectly by for example publications, try to find a good balance in this for later phases of the research. And then we end up to what I mentioned before where it becomes important to focus on the development of people, career wise but also personal.

What keeps you at the university instead of industry?

Curiosity is the main thing, I love to find out how to do things differently. So my curiosity, the freedom, cooperation with students, these are the things I love about working at the university.

What are your talents outside of work?

One of the things I love to do is working on models, I have been working on a model sailboat for years. I once obtained asset of drawing for the maritime department of a 12 meters American cup yacht from 1962. Those have a very distinctive hull shape, very classic. Using the drawings I drew the parts and cut the pieces. Meanwhile I have come up with the idea to use the wooden shape to also create a high tech carbon fibre version of it, a classic boat with a bit of high tech touch. The reason I started studying mechanical engineering is because of my model cars, at some point there were only a few original parts on my models and



A caricature created by Hoesein Alkissau

What can we wake you up for at night?

Sometimes I have Skype meetings late in the nights with students in Japan or some other far country with a large time difference. These are things I get out of bed for very early. Sparring with students is also one of things I like a lot. There are also things that keep me up late like for example administrative work. And another thing that I do like as well is reviewing papers, especially when I have the chance to go through an article thoroughly. A lot of work of our students is in the shape of an article which is also my preference above reports as it focusses a lot more on what they accomplished. It does take a lot of time but it is well worth it.

If you were to organize the Taylor trip, where would you go?

I have a lot of contacts in America especially north America and Asia is also fascinating me. But for example Africa I have no clue what is going on over there. I am very curious to see what they do and how they do it over there. Sometimes I am surprised by a very nice publication from a completely unknown university. Logistically it will probably be a nightmare due to the large distances between interesting places but I think it would be very interesting.

What are your talents outside of work?

One of the things I love to do is working on models, I have been working on a model sailboat for years. I once obtained asset of drawing for the maritime department of a 12 meters American cup yacht from 1962. Those have a very distinctive hull shape, very classic. Using the drawings I drew the parts and cut the pieces. Meanwhile I have come up with the idea to use the wooden shape to also create a high tech carbon fibre version of it, a classic boat with a bit of high tech touch. The reason I started studying mechanical engineering is because of my model cars, at some point there were only a few original parts on my models and everything else was custom made. I kept trying to improve my design by making it lighter, thinner and smaller. Besides modelling you might have noticed I make a lot of pictures as that is also one of my hobbies.

Are your kids following you as an engineer?

Yes, that might be the case. I have a daughter of 9 and a son of 12. My son studies at the Technasium, it is not very technical but mainly their way of working which is project orientated. He is definitely interested in technique. Like me he also loves to work with models, while I stayed on the surface he likes to go in the air. My daughter is also pretty nifty, some time ago she wanted a whipped cream spray but it was way too expensive. A few days later she comes to me with a home made construction made of a candy bag and a toothpaste tube combined together with some tape. She made her own whipped cream spray with cap! To me it does not really matter where they will end up but who knows it might be.

A week without internet or without a shower?

A week without internet, a week without a shower would annoy me. A week without internet might be nice for a change.

Philips head or Allen key?

I work a lot with wood like furniture and stuff. At home I usually make everything myself, also as to relax. And then it is usually working with a Philips head. On the other side when I am working with bicycles or other vehicle I like to take the Allen key when possible. When looking at the amount of time that I have hold both, then the Philip head wins.

Car or motorcycle?

If we start looking at the facts again, I haven't driven my motorcycle a lot. It is one of my passions for which I don't have a lot of time right now. If I have to choose then I would go for a car as it is more useful.

Wintersport holiday or beach holiday?

Wintersport, a beach holiday is not my cup of tea. But my favourite holiday is a cycling holiday by far. The nice thing is that my kids also like that a lot. This summer we stayed in Holland and we just went cycling. My wife could not go very far due to her work so we thought we'd just go with the three of us. My kids could pick the directions and we travelled around the IJsselmeer in a little over a week time. We went without any plans and decided where to go every day, it was a lot of fun.

BMD or PME?

I had a great time at BMD but I am glad that I am here now. The research became smaller and smaller so at some point I was creating MEMS and one of my PhD's wasn't doing anything medically related anymore. He asked himself why I was not at PME. Then the offer came from Robert and it didn't take me long to think about it. Also because I already had some idea's about expanding in the mechatronics directions.

Answer Christmas puzzle

If the puzzle was filled in correctly, the letters in the red boxes could form the word:

Frederick

The enthusiastic reader of the Taylor vision would have noticed that on the second page of the Christmas edition, About us, a story was written about the origin of the name of our student association. Namely, Frederick Winslow Taylor. And that is the connection between the word from the puzzle and the best track of mechanical engineering.

From all the submissions, only one submission contained the correct answers. This submission was a collaboration of two persons. So the winners of the Christmas edition puzzle are:

Justin Smid and Richard Pleeing

For correctly answering the riddle, they received a brand new cordless screwdriver. Its up to them to share it equally.



Want to win a lovely price as well? Be sure to solve the riddle on the next page!

Riddle

Get to know your Taylor Board! Solve this puzzle and you will know what our favourite drinks are, what our favourite course is and much more! In order to solve this, we will provide some clues.

Send your answer to taylor-3me@tudelft.nl. The first correct answer will win a very nice price!

Clues:

- Niek works at a workbench as a desk
- Maarten has an Acer Laptop.
- Menno's favourite drink is Goldstrike
- The standing desk is placed left of the ridiculous big desk.
- The person studying at the standing desk loves his wine.
- The person who enjoys Engineering Dynamics has a HP laptop.
- The person working on the chaotic desk has a special place in his heart for MEMSLab
- The person who studies at the desk in the middle loves Taylor port
- Miranda studies at the first desk.
- The person following the Compliant Mechanisms course has his desk next to the person who has a Dell laptop.
- The person with the Macbook Pro has his desk next to the person who is tinkering with little MEMS
- The person who is learning the Fundamentals of Mechanical Engineering drinks beer
- Thijs loves spending his time on Physics & Measurements
- Miranda has her desk next to the ordered desk
- The Person who loves the course Compliant Mechanisms has a neighbour who drinks apple cider

	Desk 1	Desk 2	Desk 3	Desk 4	Desk 5	Ordered standing work bench ridicoulessbig chaotic	HP	Dell	Acer	Alienware	Macbook	Beer	Wine	Taylor port	Goldstrike	Apple cider	Compliant mechanisms	Fundamentals of mechanical analysis	MEMS Lab	Engineering Dynamics	Physics & Measurements	
Niek																						
Miranda																						
Thijs																						
Maarten																						
Menno																						

Upcoming events

13-03-2017 - Birthday Maarten de Jager

29-03-2017 - Lunchlecture Philips Innovation Services

03-05-2017 - Lunchlecture ASML

04-05-2017 - Excursion to CCM

18-05-2017 - Excursion to ASML

08-06-2017 - Excursion to PM-Bearings

July 2017 - Taylor Trip Japan

Get involved

Quotes

We would love to receive funny, motivational, wise or other quotes from our PME staff, students and PhD'ers to make a nice section with quotes in the Vision. Please send them to us together with a little bit of context.

Vision

We are always looking for new stories for the Vision which is why we would like to invite you to send your story. This can range from articles or your PhD work to internship experiences. Do not hesitate to contact us and who knows you might be in the next Vision!

Taylor

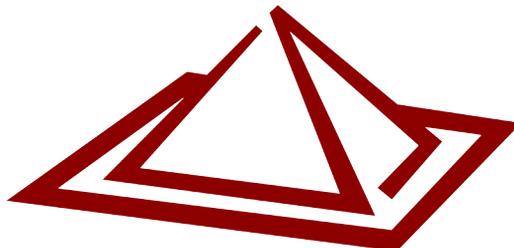
If you have any comments ideas or questions about Taylor and its activities, feel free to contact us.

You can contact us at:

Taylor-3me@tudelft.nl

Check out the website for more information!

www.dispuuttaylor.nl





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