

Stellenbosch  
UNIVERSITY  
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UNIVERSITEIT

1944 - 2024



Photo by Stefan Eis



# FACULTY OF ENGINEERING STELLENBOSCH UNIVERSITY

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*Presentation to Parents and Guardians of First-Year  
Engineering Students*

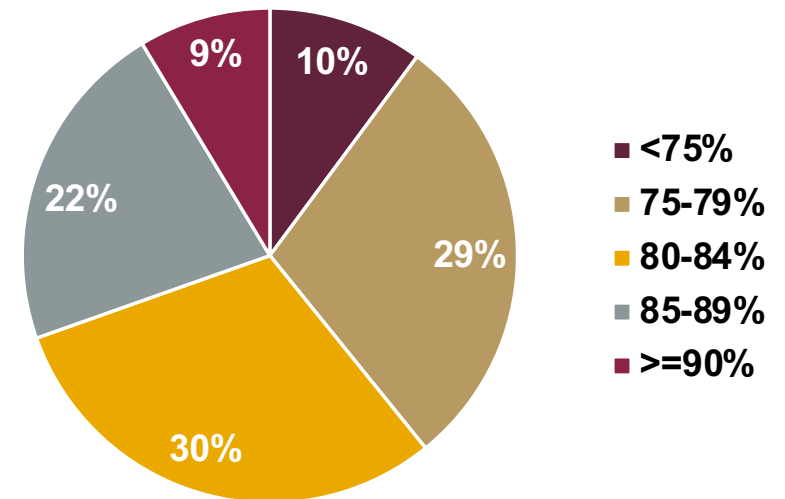
**Prof Wikus van Niekerk: Dean**

30 January 2025

# CONGRATULATIONS

- Your students' Matric results were excellent
- Your student is one of a select group
  - In excess of 18 000 applications received for about 900 places
  - 64% of our first-year students had Matric average  $\geq 80\%$

Matric Averages 2023 Cohort



# TODAY'S TALK

- Background about the Faculty
- Undergraduate programmes
- Advice
- Important information
- Questions from the audience

# TODAY'S TALK

- We want our students to do well
  - To graduate as many competent engineers as possible
- We know you want the same for your student!
- We are going to tell you what we are going to tell them during the Dean's Lectures so that you
  - Can join us in supporting them
  - Will also know what we expect of them

# DEAN OF ENGINEERING

- Prof Wikus van Niekerk
  - General management of the Faculty
  - “Guardian” for the 1<sup>st</sup> year students
- The Dean’s office regularly meets all 1<sup>st</sup> years
  - Every Monday, during the first semester: “Dean’s Lecture”
    - Part of the Intercultural Communication module
  - Advice on effective study methods
  - Having a balanced life as an engineering student
  - Offers advice and refer to further help at the University



## ADDITIONAL SUPPORT STAFF

- Ms Natalie White  
(natalies@sun.ac.za)
- Mr August Engelbrecht  
(august@sun.ac.za)
- Two educational psychologists (part time)
  - Ms Inez Saunders and Ms Annette du Plessis
  - Arrange appointments through Ms Natalie White



# BACKGROUND ABOUT THE FACULTY





## VISION STATEMENT

To be the leading Engineering Faculty on the African continent, recognised globally for excellence, innovation and inclusivity in education, research and societal impact.

# HISTORY

- Established in 1944
- Faculty is 81 years old this year
- First Afrikaans Engineering Faculty in South Africa, now multilingual
- Track record for producing excellent engineering graduates
- Outstanding research record in cooperation with industry

# ORGANOGRAM



Dean of Engineering  
**Prof JL (Wikus) van Niekerk**  
(021) 808 4204  
engdean@sun.ac.za



Vice-Dean (Teaching)  
**Prof Celeste Viljoen**  
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Faculty Director  
**Mr Enzo D'Aguanno**  
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Vice-Dean (Research)  
**Prof Corne Schutte**  
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Student Support  
**Ms Natalie White**  
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Student Recruitment  
**Mr August Engelbrecht**  
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Faculty Administrator  
**Ms Nicole Hartzenburg**  
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Chemical Engineering  
**Prof Christie Dorfling**  
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chemengchair@sun.ac.za



Civil Engineering  
**Prof Nico de Koker**  
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civil\_hod@sun.ac.za



Industrial Engineering  
**Prof Joubert van Eeden**  
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Electrical & Electronic Engineering  
**Prof Japie Engelbrecht**  
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ee@sun.ac.za

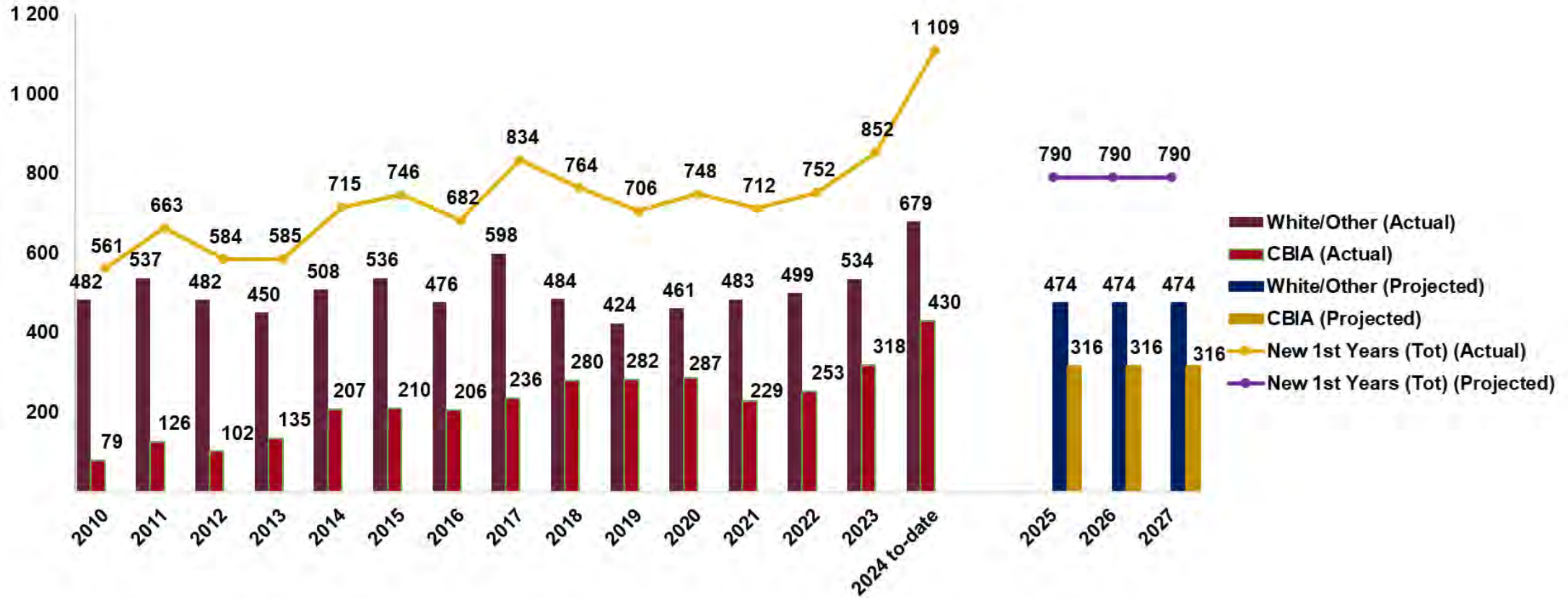


Mechanical & Mechatronic Engineering  
**Prof Johan van der Spuy**  
(021) 808 3742  
mmchair@sun.ac.za

# ENGINEERING FACULTY STATISTICS

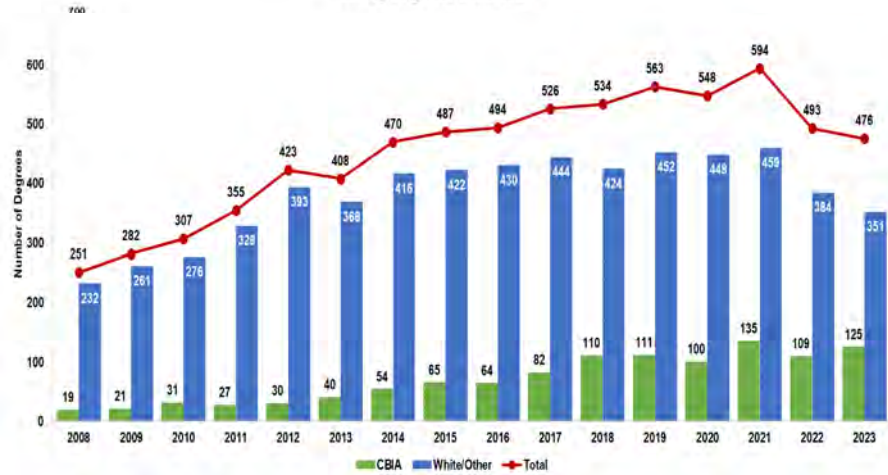
- Some numbers (2024)
  - 3 366 undergraduate students
  - 1 468 postgraduate students
  - Graduates: 476 BEng, 242 Master's and 60 PhD's (Dec 2023 & March 2024)
- Typical intake of about 950 first-years
  - UG success rate of 75% (graduate after 4-6 years)
  - South Africa average 44%
  - About half of BEng 1<sup>st</sup> years graduates in 4 years

# ENGINEERING FACULTY STATISTICS

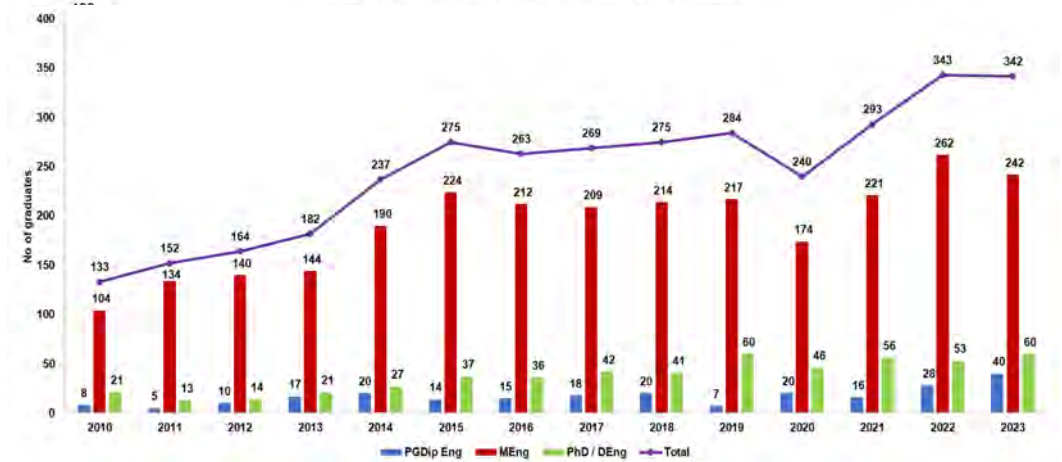


# ENGINEERING FACULTY STATISTICS

BEng Degrees Awarded



Postgraduate Qualifications Awarded



Faculty of Engineering Publication Units Delivered



# UNDERGRADUATE PROGRAMMES



## ACCREDITATION: ALL OUR BEng PROGRAMMES

- Engineering Council of South Africa (ECSA)
  - Registration as a Professional Engineer
- Washington Accord
  - Meet educational requirements in USA, Canada, Ireland, UK, Australia, Hong Kong, Japan, Korea, New Zealand, Russia, Malaysia, Singapore, Turkey, etc.





# DATA SCIENCE

- All BEng programmes introducing data science elements
- BEng Electrical and Electronic with focus area *Data Engineering* introduced in 2020
  - ECSA accredited
    - As part of the BEng E&E with a focus on Data Engineering
  - Not a common 1<sup>st</sup> year
  - Substantial statistics and computer science content
- PGDip and MEng (Struct) in Data Science

# COMMON 1<sup>ST</sup> YEAR FOR ALL BENG

*Except Data Engineering*

## 1<sup>ST</sup> SEMESTER

1. **Engineering Maths 115**
2. **Applied Maths B124**
3. Eng Chemistry 123
4. Eng Drawings 123 or **Probability Theory and Statistics 114**
5. Eng Physics 113
6. Intercultural Communication 113

## 2<sup>ND</sup> SEMESTER

1. **Engineering Maths 145**
2. **Applied Maths B154**
3. Comp programming 143
4. Electrotechnique 143
5. Strength of Materials 143 or **Data Science 141**
6. **Programme-specific module**

# EXTENDED CURRICULUM PROGRAMME (ECP)

- Bridging year followed by normal 4-year BEng programme
- Modules
  - **Mathematics 186**
  - **Chemistry 176**
  - Physics 176
  - **Computer Skills 176**
  - Scientific Communication Skills 116, 146
  - **Preparatory Technical Drawings 146**
  - University Practice in the Natural Sciences 176
- Required to proceed after 1<sup>st</sup> year
  - **Pass all modules**
  - **Average mark above 65%**

# 1<sup>ST</sup> YEARS' SUPPORT

- Normal offering
  - Lectures, tutorials, online material
  - Appointment to see lecturer
- Group learning sessions
  - After normal classes, facilitated by teaching assistant
- Video recordings of key topics
- Dean's lectures
- Educational psychologist
  - Anxiety, stress and study methods

# LANGUAGE POLICY

- 1<sup>st</sup> year: Parallel Medium
  - Separate Afrikaans and English classes in all subjects, except for electives in second semester
- 2<sup>nd</sup> year
  - Parallel medium: Large modules with multiple class groups
  - Other: Lectures in English, with support in Afrikaans
- 3<sup>rd</sup> year
  - Lectures in English, with support in Afrikaans
- 4<sup>th</sup> year
  - Lectures in English
- General
  - Textbooks all in English
  - **Tests/exams questions in English and Afrikaans**
    - 4<sup>th</sup> year Afrikaans on request
  - **Answers in Afrikaans or English**

# COMPUTERS

- Students do not need their own PCs/laptops
  - All have 24hr access to computers and *legal software!*
  - A first year student needs nothing more than a simple pocket calculator, such as the one used at school / Faculty's standard one
- But it is convenient to have a computer or tablet at residence to access online learning material
  - But must be used responsibly
  - Must register with IT to get onto SU Network

# TEXTBOOKS

- Textbooks
  - Order your own textbooks, from:
    - Van Schaik Bookstores
    - Various online bookstores
      - Information is available on [www.eng.sun.ac.za](http://www.eng.sun.ac.za).
- Drawing instruments
  - Buy at Unistat in the Neelsie
  - Or second-hand from senior students or continue to use the kit that you've used at school

# SOME ADVICE





# YOUR FEARS AS PARENTS/GUARDIANS

- People say
  - Engineering is difficult
  - University costs a lot of money
- Will my student
  - Study successfully?
  - Maintain the right balance between work and play?
  - Adapt to large classes, fast pace and significantly higher workload?
- We all want a world-class qualification
- Therefore we expect
  - Hard work
  - Discipline: We strictly apply our rules
  - Maturity
  - Accept responsibility
- **Obtaining the BEng degree should be the #1 priority at Stellenbosch**

# SUCCESS FACTORS

- Aim to be a GOOD engineer
  - Learn to solve **new** technically **demanding** problems while under considerable **pressure**
- Learn that by DOING as many problems as possible yourself
  - Careful of only working through examples and old papers
  - Some group learning, learn from your peers
- Aim to gain maximum your understanding and knowledge!
- **Aim to do well (at least 60%)**
  - Not only to pass assessments and modules by scraping through with 50%

# SUCCESS FACTORS

- Use the resources
  - Class attendance, pre- and review material
  - Take practicals and tutorials very seriously
    - Study the material before coming to class
  - Do many problems; red circle questions
  - Ask questions in class
  - Talk to your lecturers & tutors
  - Form study groups, “Study Buddies”
- **Keep up**
  - There will not be time to catch up

# WHAT DO WE EXPECT?

- 15 credit module  $\Rightarrow$  150 hours of work in total over a semester
- Time budget per lecturing week
  - 32 hr in contact sessions
  - 16 hr after hours
- Test week assessment (A1) per 15 credit module
  - 12 hr preparation
  - 2 hr writing
- Exam assessment (A2) per 15 credit module
  - 18 hr preparation
  - 3 hr writing

# WHAT DO WE EXPECT?

- That students should ...
  - Work 5 evenings per week, 3 hours per evening
    - Start studying at 19:30
  - On weekend: also 3-4 hours preparation for Monday → *That adds up to 50 hours per week!*
  - Keep up with the work
  - Do not waste time during the day
  - Relax - daily between 17:00 and 19:30
    - Maintain lifestyle (social, exercise, spiritual...)
- Weekends, public holidays, vacations:
  - Take time off - if up to date
  - Otherwise: weekends = catch up time!

**SECRET: Time management for a healthy balance**

## THE REWARD ...

- A reputable degree qualification that is recognised widely, in SA and abroad
- The ability to solve technical problems
- The ability to make a success of a wide variety of jobs, also to create one's own job or start a new company

# EARLY SIGNS OF PROBLEMS

- BEng in more than 4 years?
  - First-year average 50-55%
  - Often passes modules with 50%
  - Write A3 (supplementary assessments)
  - More than 20% down from school marks
  - Downward trend in second semester and second year
  - Anxiety and depression
  - Reluctant to ask questions and not working in small groups
  - Not talking about academic problems
  - Don't seek help in time, sooner is much better than later

# EARLY SIGNS OF PROBLEMS

- Emotional problems/depression
  - Negative emotions
  - Irritable or always tired
  - Cannot sleep and difficult to concentrate
  - Change in appetite or weight
  - Depression
- **Seek help at**
  - Faculty's educational psychologists
    - contact Ms Natalie White [natalies@sun.ac.za](mailto:natalies@sun.ac.za))
  - Centre for Student Counselling and Development (CSCD/SSVO)!





# RECIPE FOR FAILURE

- High School approach to their Engineering studies
  - Chasing marks, not understanding
  - Learning mainly by studying examples
  - Working out old exam papers
  - Poor study approach
  - Tutors!!
- Poor self-discipline and time management
- Engineering not what you want to do
- Only wants a BEng degree, not developing yourself to be a good engineer

# RECIPE FOR FAILURE

- Wrong priorities
  - Excessive participation in residence activities
  - Excessive sports commitments, especially provincial and national
  - Excessive ... (e.g., Capela singing competition)
  - Computer games & TV series, social media, etc.
  - Wrong friends who study too little
  - Too much pocket money
- Relational problems
  - Relationship problems (room-mate, boyfriend, girlfriend)
  - Stress about problems at home
  - Excessive family commitments
- Alcohol abuse

## RECIPE FOR FAILURE

- Working unwisely
  - Insufficient sleep
  - Inefficient use of time
  - Not using lectures or face-to-face opportunities
  - Not using other support offered
  - Cramming before test/exam
  - On Social Media while “studying”

## OTHERWISE...

- Unsatisfactory progress → not allowed to continue because no reasonable chance of graduating BEng
  - After 1<sup>st</sup> year:
    - At least **75 credits** of the 1<sup>st</sup> year's credits passed
    - At least **2** of the four mathematics modules passed
  - Every year thereafter:
    - At least **75 credits** passed in the preceding year
    - And at least **70% of the accumulated credits** to date, e.g. 210 credits after two years
- Must earn degree within 6 years
  - Only one chance for a GOOD study record
  - Shouldn't come to university to play!

# PARENTS'/FAMILY'S CONTRIBUTION

- You can contribute
  - Maintain contact with your student
  - Encourage your student
  - Ensure that you know how he/she is progressing
  - Encourage him/her to aim high
- We will try to keep you informed
  - POPI Act limits what we can share with parents and guardians

# RESOLVING CLASS/PERSONAL PROBLEMS

- If a class has a problem:
  - **Class representative** speaks to the lecturer(s) or Dean
  - Speak to the Engineering Student Council
  - Once per semester class reps meet Dean and lecturers
- If *your student* has a problem: Let **him/her**
  - Speak to the lecturer
  - Speak to Ms Natalie White
  - Make an appointment to see the Dean
  - Visit the educational psychologist or Centre for Student Counselling and Development (CSCD)
  - **Take responsibility** to solve problems before asking parents to help
- **Do not wait** until the problem becomes a crisis

# IMPORTANT INFORMATION

eng.sun.ac.za

Newsletter with important info

Textbooks

The screenshot shows the website [eng.sun.ac.za/first-year-students/](http://eng.sun.ac.za/first-year-students/). The page features a navigation menu with options like 'ABOUT US', 'NEWS', 'PROSPECTIVE STUDENTS', 'CURRENT STUDENTS', 'DEPARTMENTS', 'RESEARCH', 'STAFF', and 'CONTACT'. A dropdown menu is open under 'CURRENT STUDENTS', listing 'MySUN', 'First-Year Students', 'Engineering Calendar 2024', '2024 Registration Rules (non-first year BEng)', 'Language Policy and Implementation Plans', 'FIRGA (Timetable)', and 'Ethics Applications'. The main content area includes a '2024 First-Year Engineering Student' heading and a grid of resource buttons: 'SU's Welcoming Programme', 'US se Verwelkomsprogram', 'Assessment Rules', 'Assesseringsreëls', 'Newsletter for First-Year Students', 'Nuusbrief vir Eerstejaarstudente', 'Guide to timetable | Gids na Klasrooster', 'EDP Welcoming Lecture - tbc', 'Textbooks | Handboeke', 'EDP Groups - tbc', 'Computer recommendations | Rekenaar aanbevelings', 'EDP Study Guide - tbc', 'YouTube', and 'Bursary information'.

# WELCOMING PROGRAMME

Visit the Maties Welcoming page:

<http://www.sun.ac.za/english/welcome/Pages/default.aspx>

- For Mainstream Welcoming information visit the Welcoming programme
- Faculty-specific Welcoming information is available here.

Stellenbosch UNIVERSITY (YUNIVESITHI) UNIVERSITEIT

Home About us Faculties Students Management Alumni Donors Staff Research News & Media Give to SU Library

## Welcome Maties!

Congratulations! You are now a Matie and part of a vibrant and multicultural student community of 35 000 students. Your journey at Stellenbosch University begins with various campus events and faculty welcoming programmes, giving you the opportunity to explore and familiarise yourself with the campuses.

- Welcoming Programme
- Welcome event
- Faculty welcoming programmes
- Registration and fees
- International students
- Postgraduate students
- MySun
- Vice-Chancellor welcome
- Campus safety



# SAFETY

Stellenbosch probably not more dangerous than any other town in South Africa, but...

- Please take reasonable safety precautions
  - Major risk:
    - Pub crawls and then vulnerable to crime on the way home
- Don't walk around alone late at night
  - Especially not in isolated spots!
  - Form and move in groups
  - Call Campus Security

# CAMPUS SECURITY

- Emergency number: **021 808 2333**
- WhatsApp: **082 808 2333**
- Enquiries / Reporting / Pedestrian service: **021 808 4666**

## IN CONCLUSION

If you need help or advice, contact the Dean's office:

021 808 4204

[engdean@sun.ac.za](mailto:engdean@sun.ac.za)

To schedule an appointment with an educational psychologist, contact Ms Natalie White

[natalies@sun.ac.za](mailto:natalies@sun.ac.za) | 021 808 3614

**May our students all be successful!**

For a copy of the presentation, please request by e-mail to [natalies@sun.ac.za](mailto:natalies@sun.ac.za)



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Thank you  
Enkosi  
Dankie

Photo by Stefan Els