



Stellenbosch
UNIVERSITY
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UNIVERSITEIT

1944 - 2024



Photo by Stefan Els



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FACULTY OF ENGINEERING STELLENBOSCH UNIVERSITY

Presentation to Parents of Engineering Students

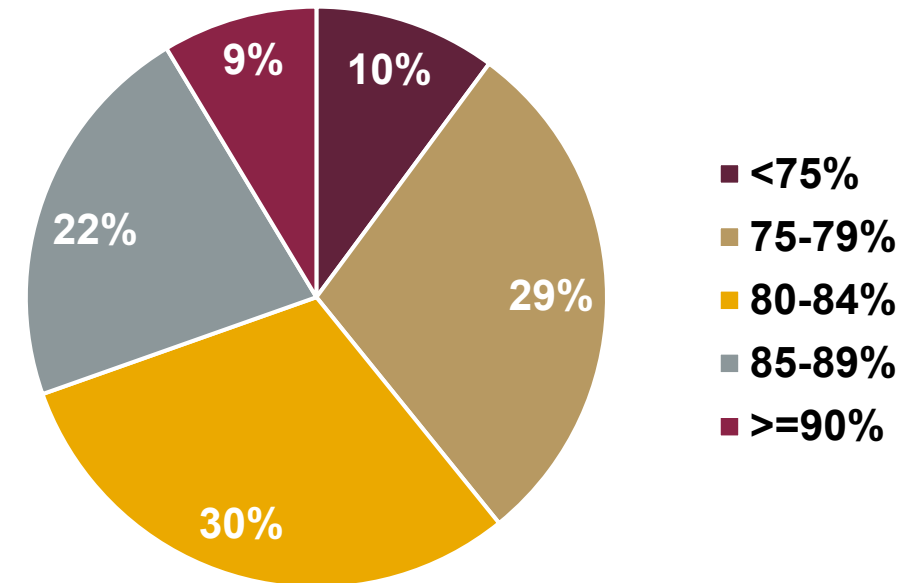
Prof Wikus van Niekerk: Dean

1 February 2024

CONGRATULATIONS

- Your child's Matric results were excellent
- Your child is one of a select group
 - More than 6 000 applications for 840 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 educate as many competent engineers as possible
- We know you want the same for your child!
- We are going to tell you what we are going to tell them during the Dean's lecture 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 1st year students
- The Dean’s office regularly meets all 1st years
 - Every Monday, whole 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 Plesses
 - Arrange appointments through Ms Natalie White



BACKGROUND ABOUT THE FACULTY



MISSION OF ENGINEERING FACULTY

- To serve as a **cost-effective** source of **excellent** technical expertise, through
 - Teaching
 - Research, and
 - Service to industry and the community

HISTORY

- Established in 1944
- Faculty is 80 years old
- First Afrikaans Engineering Faculty in South Africa, now multilingual
- Track record for producing excellent undergraduate students
- Outstanding research record in cooperation with industry

ORGANOGRAM



Dean of Engineering
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Faculty Director
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Vice-Dean (Research)
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Faculty Administrator
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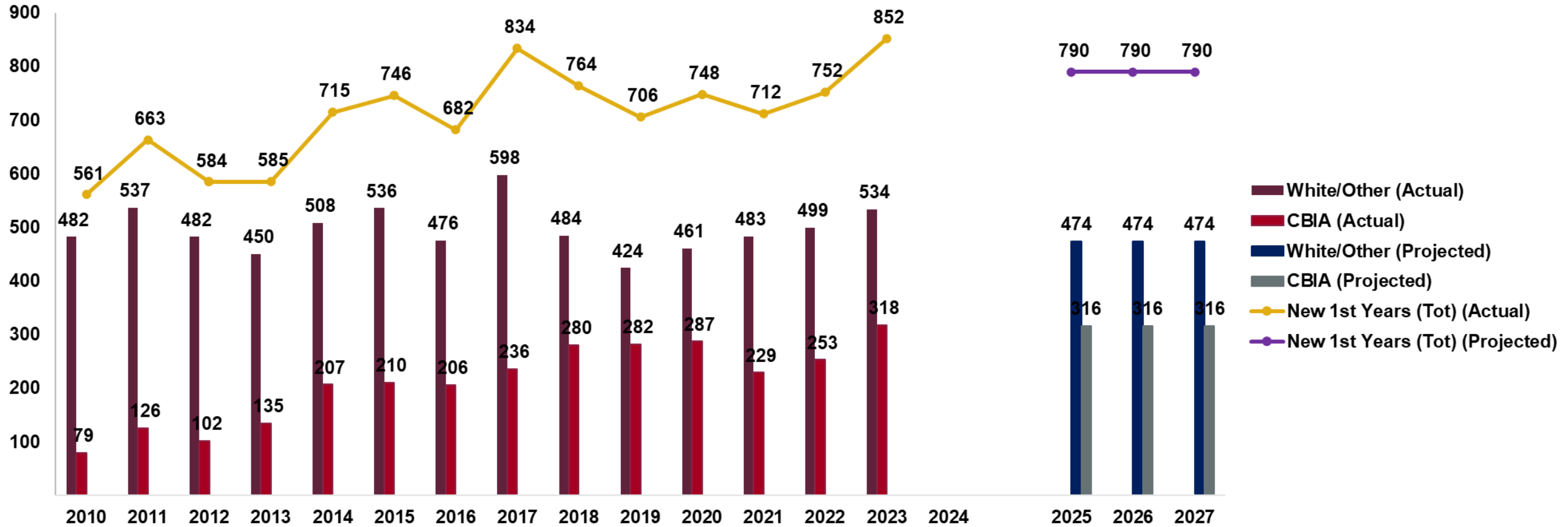
Mechanical & Mechatronic Engineering
Prof Johan van der Spuy
(021) 808 3742
mmchair@sun.ac.za

ENGINEERING FACULTY STATISTICS

- Some numbers (2023)
 - 2 952 undergraduate students
 - 1 297 postgraduates (~31%)
 - Graduates: 493 BEng, 262 Master's and 53 PhD's (Dec 2022 & March 2023)
- Typical intake of about 840 first years
 - UG success rate of 75% (graduate after 4-6 years)
 - South Africa average 44%
 - About half of BEng 1st years graduates in 4 years

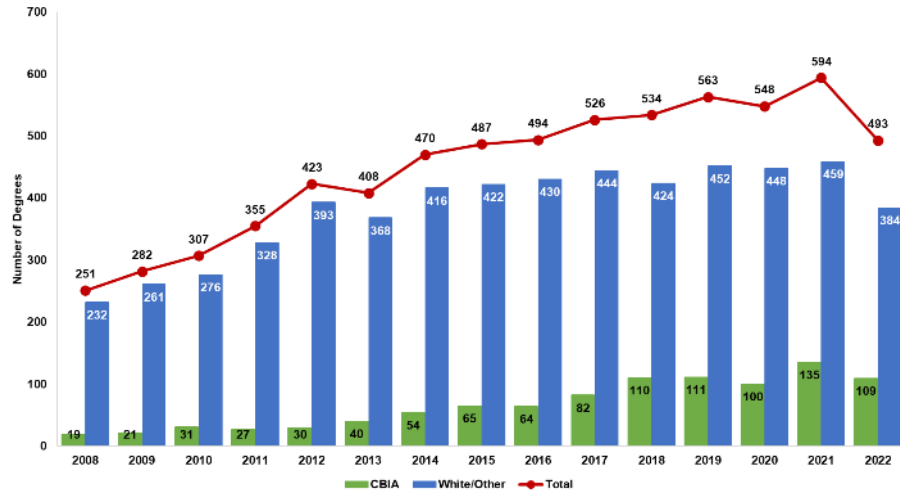
ENGINEERING FACULTY STATISTICS

B.Eng New First Year Growth and Enrolment Planning

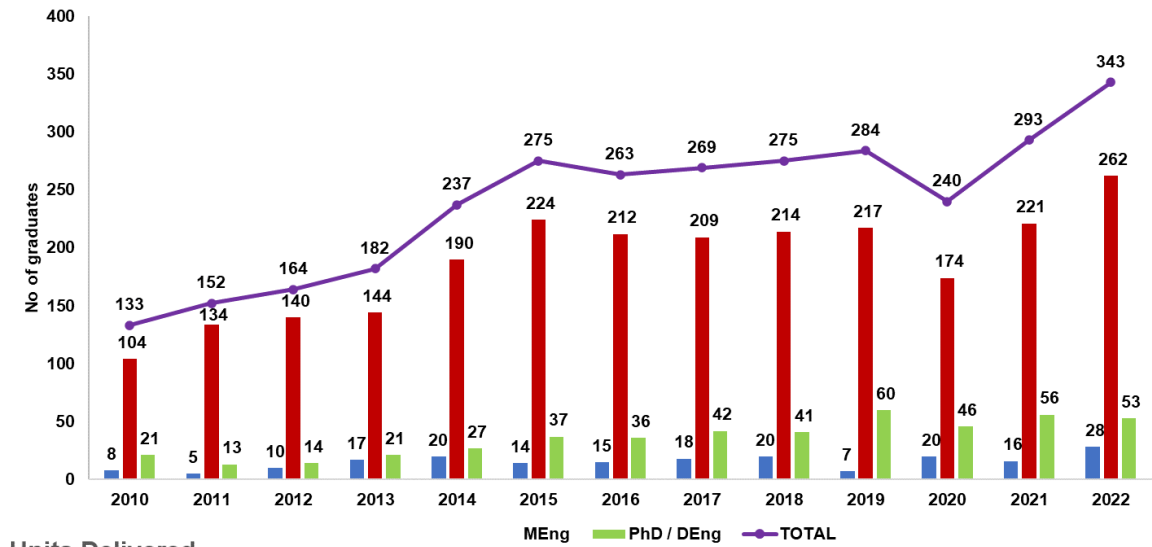


ENGINEERING FACULTY STATISTICS

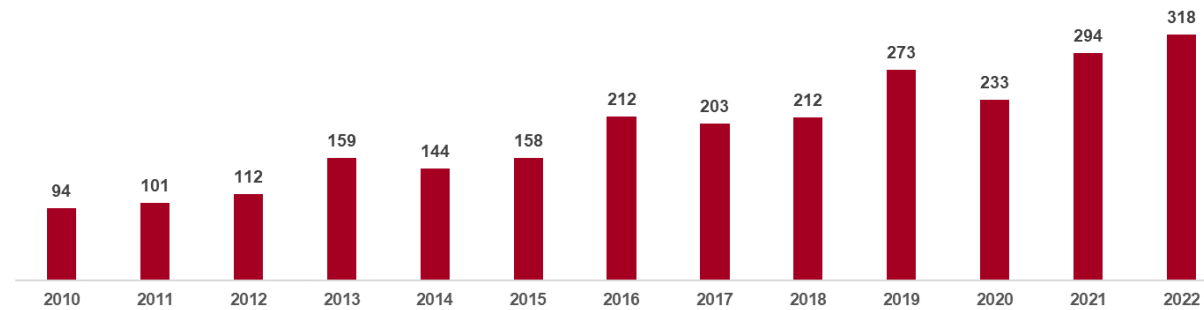
BEng Degrees Awarded



Postgraduate Qualifications Awarded



Faculty of Engineering Publication Units Delivered



UNDERGRADUATE PROGRAMMES



ACCREDITATION: ALL OUR BEng PROGRAMMES

- Engineering Council of South Africa
 - 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



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 common 1st year
 - Substantial statistics and computer science content
- PGDip and MEng (Struct) in Data Science

COMMON 1ST YEAR FOR ALL BENG

Except Data Engineering

1ST 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

2ND 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 1st year
 - **Pass all modules**
 - **Average mark above 65%**

1ST 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
- ~~Private, individual tutors~~

LANGUAGE POLICY

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

ADVICE



YOUR FEARS AS PARENTS/GUARDIANS

- People say
 - Engineering is difficult
 - University costs a lot of money
- Will my child
 - Study successfully?
 - Maintain the right balance between work and play?
 - Adapt to large classes, fast pace and high 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 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
 - Not mostly working through examples
 - Some group learning
- Aim to gain maximum knowledge!
- **Aim to do well (at least 60%)**
 - Not only to pass tests and modules with 50%

SUCCESS FACTORS

- Use the resources
 - Class attendance, review work
 - 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
- **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 (A1) per 15 credit module
 - 12 hr preparation
 - 2 hr writing
- Exam (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
 - Anxiety and depression
 - Reluctant to ask questions and not working in small groups
 - Not talking about academic problems
 - Don't seek help

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
 - Centre for Student Counselling and Development (CSCD/SSVO)!



RECIPE FOR FAILURE

- High School attitude to work
 - Chasing marks, not understanding
 - Learning mainly by studying examples
 - Working out old exam papers
 - Poor study approach
- Poor self-discipline
- 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 res loyalty
 - Excessive sports commitments
 - Excessive ... (e.g., A Capela singing competition)
 - Computer games & TV series
 - 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
 - Social media on while “studying”

OTHERWISE...

- Unsatisfactory progress → not allowed to continue because no reasonable chance of graduating BEng
 - After 1st year:
 - At least 60% of the 1st year's credits passed
 - At least 2 of the mathematics subjects passed
 - Every year thereafter:
 - Threshold increases by 70% of a full year's credits
- 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 child
 - Encourage your child
 - 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

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 child* has a problem: Let **him/her**
 - Speak to the lecturer
 - Speak to Ms 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/. 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 such as 'SU's Welcoming Programme', 'Assessment Rules', 'Newsletter for First-Year Students', 'Guide to timetable | Gids ne klasrooster', 'Textbooks | Handboeke', 'Computer recommendations | Rekenaar aanbevelings', 'YouTube', 'US se Verwelkomingsprogram', 'Assesseringsreëls', 'Nuusbrief vir Eerstejaarstudente', 'EDP Welcoming Lecture - tbc', 'EDP Groups - tbc', and 'EDP Study Guide - tbc'. A footer bar at the bottom contains 'first-year-students/'.

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
- For EDP Welcoming information visit the Welcome guide (page 44)

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AFRIKAANS

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Welcome Maties!

It's official! You are now a Matie and part of a vibrant and multicultural student community of more than 32 000 students. To make you feel at home, we have put together a welcoming programme that covers all aspects of life at Stellenbosch University.

Guide for newcomers	Welcoming programme	Welcoming event
Meet your faculty	Vice-Chancellor's welcome	Registration and fees
International students	Postgraduate students	MySun

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
- 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

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

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



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Thank you
Enkosi
Dankie