Devin Brendan Azzie

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Date: 4th August 2018

Objective

To gain more work experience in a field I am particularly interested in and understand how it is applied to real-world problems and start networking with people already well established in industry

Skills

- **Experienced with Autodesk Inventor Design Software and can generate engineering drawings**
- **Proficient in using MATLAB and Simulink having used MATLAB for 3 years and Simulink for 2 years**
- **Basic Python coding knowledge**
- **Experience with Ansys Workbench 17.2 Finite Element Analysis (FEA) software.**
- **Basic Computational Fluid Dynamics (CFD) knowledge**
- **Good at developing code to solve problems and process large amounts of data for further analysis.**
- **Quick learner when it comes to learning to use new software tools**
- **Good at problem solving**
- **Logical thinker**
- **Good with working as part of an interdisciplinary engineering team.**
- **Good technical report writing skills**

Education

University of the Witwatersrand (2014 – 2018)

I have a Bachelor of Science in Mechanical Engineering (BSc Mech Eng) and graduated on the 4th of July 2018.

2016 awards for third year of study included:

- Ethical Warrior Award for best student in the Engineering Ethics course of 2016

2015 awards for second year of study included:

- Dean's List

2014 awards for first year of study included:

- Dean's List
- Merit Certificate for achieving above 80% for the physics course PHYS 1014

Full unofficial academic transcript for tertiary studies is attached. Full official academic transcript is available upon request.

De La Salle Holy Cross College High School (2009 – 2013)
Matric Class of 2013

Final Matric results after writing IEB Matric final examinations were 7 A's and 2 B's

Full Matric Results are attached.

Awards include:

- Diligence scroll for 2011 Academic Year (Grade 10)
- Academic Full Colours for 2012 Academic year (Grade 11)
- Academic Full Colours Re-award for 2013 Academic Year (Matric)
- Cricket 2nd Team scroll
- Athletics Team scroll
- Drama Full Colours
- Bene Merere Scroll (Equivalent of Half Colours for Service to the school)
- Awarded an Honours Blazer at Matric Valediction
- Awarded Commitment Trophy at Matric Valediction as voted for by staff
- Awarded Fellowship Trophy at Matric Valediction as voted for by peers
- Was part of the top 10 academic students in the grade for both 2012 and 2013

Experience

General Worker at Creative Cabinet Solutions (2012 and 2013)
The time period during which the work experience occurred was during the mid-year and end of year school holidays during the last two years of high school.

The main responsibilities of the job included operating heavy wood-cutting machinery to cut boards to specified sizes, assembling cabinets from AutoCAD Drawings, operating a CNC Woodcutting Machine as well as aiding in installations on site of various different jobs that were running at the time.

References
Available upon request.

Vacation Work Program at Opti-Num Solutions (2016 and 2017)
The vacation work program ran for a total of eight weeks which were broken up as follows:

- 27 June 2016 – 8 July 2016
- 5 December 2016 – 16 December 2016
- 3 January 2017 – 27 January 2017

The period from 27June to 8 July focused on undergoing a 3 day MATLAB Essentials training program which was followed by a 2 day Simulink training program and then the second week focused on having vacation work students reproduce a 45-60 minute webinar on MATLAB products in under 30 minutes and then deliver the presentation along with product demonstrations to the company.

The second period of vacation work was focused on a 6 week long project with a 3 week break over Christmas. Vacation work students were paired up with another engineering student from outside their discipline to work on a specific project. I was paired with an electrical engineer and together we designed an automatic water level control system using MATLAB products to design the water level controller and low-cost hardware to implement it. The entire design project was assigned a budget of R2000 of which only half was needed to buy and build the water tank system and the water level controller. The entire system was first modeled and simulated using Simulink from MATLAB and then the controller was deployed to the low-cost hardware for real-life testing and demonstration.

The final design was two plastic water containers which each had small water pumps in them that could feed water into the other tank. Ultrasonic distance sensors were mounted over the tanks and used to constantly measure the water tank levels. The sensors fed the water levels of each tank to the Arduino Uno microcontroller upon which the State-flow controller was deployed and depending on what the levels were in the tanks, the microcontroller would control the voltage supplied to each pump to allow them to change the water levels. The system as a whole allowed for a desired water level in the main tank to be selected and then the system would maintain the water level by emptying or filling the main tank from the reservoir tank depending on how the system was disturbed.

My role in the project as the mechanical engineer was to develop a mathematical model describing the fluid mechanics of the physical water tank system and pumps as well as select and build the required physical system of the two tanks. I was also responsible for designing and implementing the water level measurement system so that it could be incorporated into the system model. Over the course of the project, full documentation as well as a technical report was written up for the project.

References

Work was done under the supervision of Kirsten Smith who is an Application Engineering Manager at Opti-Num Solutions and contact details are available upon request.

This is to certify that **Mr Devin Brendan Azzie** was registered as detailed below:

Student ID: 842690

Date: 21 June 2018

Program/Course		Final Marks	Result Code	Result Decision	Exam Type
2014					
Bachelor of Science in Engineering (Mechanical) (Full-Time)		**Year of Study 1**			
CHEM1033	Chemistry I (Auxiliary) (Engineering)	76	A	PASS	
MATH1014	Mathematics I (Engineering)	85	A	PASS	
MECN1001	Introduction to Mechanical Engineering and Design	75	A	PASS	
MECN1003	Engineering Drawing	75	A	PASS	
PHYS1014	Physics I	80	A	PASS	
PHYS1015	Mechanics	71	B	PASS	
OUTCOME:	Permitted to proceed				
2015					
Bachelor of Science in Engineering (Mechanical) (Full-Time)		**Year of Study 2**			
ELEN2000	Electrical Engineering	69	C	PASS	
MATH2011	Mathematics II	71	B	PASS	
MECN1998	Vacation Work 1 (Mechanical)			PASS	
MECN2000	Fluid Mechanics I	75	A	PASS	
MECN2005	Mechanical Engineering Laboratory I	75	A	PASS	
MECN2006	Thermodynamics I	68	C	PASS	
MECN2010	Introduction to Materials Science and Engineering	70	B	PASS	
MECN2011	Applied Mechanics A	71	B	PASS	
MECN2012	Computing Skills and Software Development	81	A	PASS	
MECN2013	Applied Mechanics B	33	F	WSP1	
MECN2013	Applied Mechanics B			PASS	SUPP EXAM
MECN2014	Mechanical Engineering Design I	75	A	PASS	
OUTCOME:	Permitted to proceed				
2016					
Bachelor of Science in Engineering (Mechanical) (Full-Time)		**Year of Study 3**			
MATH3026	Mathematical Methods	57	D	PASS	
MECN3002	Fluid Mechanics II	61	C	PASS	
MECN3007	Mechanical Engineering Laboratory II	66	C	PASS	
MECN3010	Mechanics of Solids I	62	C	PASS	
MECN3012	Mechatronics I	62	C	PASS	
MECN3013	Business Management	72	B	PASS	
MECN3017	Thermodynamics II	69	C	PASS	
MECN3019	Mechanical Engineering Design and Production	68	C	PASS	
MECN3027	Mechanical Vibrations	56	D	PASS	
MECN3028	Engineering in its Social Context	72	B	PASS	
MECN3032	Numerical Methods and Statistics	81	A	PASS	

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Student ID: 842690

Date: 21 June 2018

Program/Course	Final Marks	Result Code	Result Decision	Exam Type

OUTCOME: Permitted to proceed

2017
Bachelor of Science in Engineering (Mechanical) (Full-Time) **Year of Study 4**

MECN1004	Selected Topics in Social Science	68	C	PASS
MECN1996	Engineering Professional Activity			PASS
MECN1999	Vacation Work 2 (Mechanical)			PASS
MECN4005	Design Project	45	F	FAIL
MECN4006	Research Project	65	C	PASS
MECN4013	Thermal Systems	50	D	PASS
MECN4020	Systems Management and Integration	69	C	PASS
MECN4021	Fluid Dynamics	69	C	PASS
MECN4023	Mechanics of Solids II	72	B	PASS
MECN4029	Mechatronics II	64	C	PASS

OUTCOME: Must return to complete requirements for year of study

2018
Bachelor of Science in Engineering (Mechanical) (Full-Time) **Year of Study 4**

MECN4005	Design Project	68	C	PASS

OUTCOME: Completed all requirements for the Qualification.

Qualification:

Bachelor of Science in Engineering — Qualified : 25 May 2018
Completed all requirements for Qualification

Prizes & Awards:

2014 Dean's List
2014 Certificate of Merit — PHYS1014 Physics I
2015 Dean's List

Scholarships:

2014 UNIVERSITY ENTRANCE SCHOL
2015 UG -UNIV COUNCIL MERIT SCHO

The student has fulfilled the requirements for a certificate of conduct

Please note that the codes reflected in the transcript may differ from those in use at the time of the original registration.

REPUBLIC OF SOUTH AFRICA

National Senior Certificate

Awarded to

DEVIN BRENDAN AZZIE

Identity number 9601095123085

Subject	%	Achievement level
English Home Language	83	7
Afrikaans First Additional Language	79	6
Mathematics	96	7
Life Orientation	85	7
Accounting	79	6
Life Sciences	80	7
Physical Sciences	81	7
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+ Mathematics: probability, data handling & geometry	95	-
**********	***	*

This candidate is awarded the National Senior Certificate and has met the minimum requirements for admission to bachelor's degree, diploma or higher certificate study as gazetted for admission to higher education, subject to the admission requirements of the higher education institution concerned.

With effect from December 2013

M. S. Rakometsi

Chief Executive Officer

140 9406 0178 D

This certificate is issued without alterations or erasure of any kind

UMALUSI

Council for Quality Assurance in General and Further Education and Training South Africa

4429326

Advanced Programme *Mathematics*

This is to certify that

DEVIN BRENDAN AZZIE

131027020024

obtained the following result in the Advanced Programme Mathematics examination administered by the IEB in November 2013

Percentage	Rating Level	Optional Module
81%	7	Statistics

Advanced Programme Mathematics is an optional subject in addition to the requirements of the NSC Core Mathematics and Mathematics Paper 3. It is examined externally at the end of Grade 12 by the IEB and quality assured by Umalusi. This course consists of two compulsory modules:

Differential and Integral Calculus

Algebra

And one optional module selected from:

Statistics

Finance and Modelling

Matrices and Graph Theory

ieb assessment matters

Chief Executive Officer

December 2013

Date

ieb