SAQI
The South African Quality Institute

e - Quality Edge
bringing quality information to South Africans since 1996

Tel: +27 12 349 5006
Fax: +27 12 349 1232
www.saqi.co.za

CONTENTS

WWW.SAQI.CO.ZA

No 216 ● December/January 2018

Welcome to the December / January edition of our e Quality Edge

First of all I would like to wish, on behalf of SAQI, all our members and associates a happy, prosperous and Quality 2018. Secondly I must apologize that this newsletter is going out a little later than usual. There is a good reason for that as I am currently recovering from heart surgery and have been away from the office for a while.

Our lead article is the second part of our Belgium colleague's Willy van den Brande on The future of quality - no more quality management. Alastair Walker then continues his Information Technology series and tells us how to get to grips.

As I am at home recovering from my surgery I have put together an article on quality performance in a South African hospital. Our regular contributor Terry Booysen covers a very pertinent topic in South Africa at the moment and informs us that Leadership is responsible for achieving good corporate governance outcomes. As our South African learners are now going back to school Richard Hayward tells them How to get ready for a great year.

I would like to take this opportunity to thank all our South African and international quality colleagues who sent me words of encouragement during my time in hospital and through the recovery period.

Paul Harding
SAQI MD

Quality:
helping South Africans live, learn and work better

The Future of Quality: No More Quality Management

Part 2

By Willy van den Brande

1. Introduction

I ended part 1 of this article (eQE Issue 215 – November 2017) with the following sentence: "We (quality professionals) should not be important, we should no longer be needed".

However, taking quality management out of the hands of quality professionals will not solve the problem. We need to make sure that our very valuable quality knowledge is spread to a much wider audience in a structured way. That is by no means an easy task. In this second part I will give some ideas of how this could be done and what is needed to make it work. I will focus on quality engineers and quality managers.

2. An Engineer in Quality or a Quality Engineer?

When we use the term quality engineer we basically mean an engineer with extensive knowledge of quality tools and methods, generally to be compared with what we expect from a Six Sigma Black Belt (SSBB). In part 1 we gave an overview of the body of knowledge related to these functions. A large part – the most complex part - is statistical knowledge. As all engineers get a course on statistics somewhere during their education it is actually strange to see how many courses are given on statistics for engineers that are active in industry. Why would a company need to pay for something that basically should already be in the training of the people they hired?

I give six sigma green belt and black belt courses and courses in applied statistics in general. At least 95% of my students had a course of statistics during their studies. But again 95% of them tell me that they have forgotten all about it. They studied very hard to pass the exam and hoped never to encounter it again in the rest of their life. To their excuse: I was exactly the same. I only realised that statistics could be useful when I got into contact with the practical statistical techniques that we use within quality. Many of our quality courses are in fact rework or at least should be rework, so non-value-added or what the Japanese would call MUDA.

Statistics courses in higher education are given by statisticians aiming to create new statisticians. As a result the wrong things are given by the wrong people to the wrong audience. I graduated as a metallurgical engineer without knowing the very simple notions of variation, statistical stability, control charts, measurement systems analysis and basic design of experiments. That is a crying shame.

Quality organisations could develop a statistics course by engineers for engineers containing those theoretical concepts that are needed to understand the techniques that have practical value to an engineer. Then lobby work should start within universities, higher education, education boards and government to get these statistics courses in engineering studies.

Let me give you just one example of one of the best-known statistical techniques: linear regression. Students are taught how to calculate the regression coefficients. With the tools that are currently available, this is a total waste of time. What they very often don't know is something as valuable as a prediction interval when you use the equation to try and predict a result. Knowing the variation that you may expect in the predicted result is extremely important to judge confirmation tests. That is what an engineering student should know. I am convinced that a course like that can be incorporated in the engineering curriculum replacing the hours that they spent on theoretical statistics.

Of course if quality organisations work together with higher education institutions and are able to convince them to introduce the truly important things of statistics for engineers within their courses, they will lose all income from statistics courses afterwards. That is a major economic drawback for the organisation in question but it would be a tremendous leap for quality within our companies. So the question arises: what is our goal?

Of course within this SSBB curriculum there are also several typical quality tools. But as already indicated before, these are really not rocket science. In the same way as with statistics it must be possible to evaluate the curriculum of an engineer and to introduce basic quality tools within existing courses. In fact,

much of this could be incorporated in secondary education. Give people a group assignment and teach them some group tools while you do this, have them gather data and let them create a Pareto, have them brainstorm and set-up an Ishikawa diagram and so on.

The ultimate objective is that all engineers are quality engineers.

3. A Manager is a Quality Manager

During several years I worked in industry as a quality manager. I did what most quality managers did and probably still do today: managing the quality management system, performing audits, having a lab for more complicated measurements, evaluating suppliers and dealing with complaints and other non-quality issues. In doing this job I had contact with pretty much every department in the organisation. It quickly struck me how all managers in the company had their own idea about what the quality manager should to. Strangely enough they all wanted the quality manager to be much more critical and firm towards other departments than their own.

There is in all organisations a certain tension between departments. It is not abnormal that engineering and production do not agree on everything. So when I would talk to the engineering manager he would start to complain about production and very often he would say something like: "if I were quality manager, I would…". The dots would always come down to actions that need to be done within production. And exactly the same would happen when I talked to the production manager but of course he would do all sorts of things in engineering if he were quality manager.

The truth of the matter is that they were quality managers but they did not even realise that. How on earth can you call yourself the manager of a department if you don't feel you are responsible for the quality of that department? No one gets paid to do a job, we get paid to do the job well, correct, with quality.

But how can we get quality principles embedded within managers, no matter what department they are in? One thing that many managers have in common is that they attended business schools and have an MBA degree. There is a Dutch professor, Ben Tiggelaar, who created a course called: "MBA in one-day". His one day seminar gives an overview of the ideas of the most influential thinkers in management. People like Peter Drucker, Kaplan and Norton, Michael Hammer, Henry Mintzberg and several others. Note that not one of our so beloved quality gurus is part of his selection. We may think that our quality heroes are world-famous and have a major impact, but the sad truth is: they don't.

Of course this MBA in one-day course is not necessarily representative of the overall management world, but it shows that the impact quality has on managerial thinking, is grossly overrated. The fact that the ideas that were generated within quality management have so little impact on what students that are interested in a managerial career currently are studying, should worry us. The best way to make sure that these valuable

ideas will have a continued impact at all levels in the organisation will be to have them incorporated in business teachings. We need to study curricula of business schools to see what is not in there but should be from a quality knowledge point of view. And then we should start lobbying to get these ideas into these trainings. Only then can we get impact at the highest level.

What we need to achieve higher quality, are managers with quality knowledge that create a quality driven organization. Their main function will be to allow the intrinsic aim for a better quality of life of the people to blossom for the benefit of the organization.

4. Conclusions

Although we have reached a lot with quality, there are still major possibilities left. In order to take the next step in quality, we will need to let go of quality functions and focus on the dissemination of quality knowledge throughout organizations and society as a whole. Incorporating quality in education is key to achieving that target. Our ultimate goal is still a long way away but it is our task as quality professionals to make it happen and in doing so, to make ourselves redundant.

About the Author:

Willy is a Consultant, ASQ Certified Six Sigma Black Belt, ASQ Fellow – IAQ Associate Academician

He can be contacted at:

QS Consult
Montpellier 34
B-8310 Brugge – België
Tel: +32 (0) 479 36 03 75
willy@qsconsult.be
www.qsconsult.be

Quality in the healthcare sector

By Paul Harding, SAQI MD

Background

I am part of a group through the International Academy Quality (IAQ) that are producing a series of white papers on Quality education. One of the sub groups led by my IAQ colleague Bo Bergman of Sweden is focusing on the quality of education in the healthcare sector. An extract from his provisional paper is shown below.

Even though there have been exceptional advances in medicine, there is still a lot of challenges that troubles patients, citizens and politicians. The healthcare expenditures are considered insufficient even though its share of the GNP is increasing above what is considered reasonable for the politicians, availability and accessibility is inadequate, aging populations will require even more resources and the medical advances has improved possibilities but in many cases also made treatments more expensive. Also, new challenges are surfacing like the fear that the current era of antibiotics has come to an end due to overuse and misuse of antibiotics. To cope with all these challenges, system wide improvements are needed. We will not go into detail on all the challenges of the healthcare system but conclude that there is a need for the healthcare systems to renew themselves and be more sensitive to innovation coming both from external sources and from within. However, not all changes and all innovations are really improvements to the system (Dixon-Woods et al 2011) – systematic and total system perspectives on improvement are needed. We need a total system-wide transformation and ongoing improvement of our healthcare systems.

Personal experience

In November I was undergoing a series of medical tests following an incident on a flight to Frankfurt on my way to the IAQ conference in Slovenia. On my return I had consulted my physician who carried out a number of standard tests to see if anything relating to my condition was obvious. He then arranged for a series of further medical tests with various medical specialists to look for the root cause of my collapse on the Lufthansa flight. In late November having consulted a cardiologist I was unexpectedly admitted to hospital in Pretoria South Africa for heart bypass surgery. I took the opportunity to test first-hand how good the quality of service was and to find out is sufficient quality training being applied in the healthcare sector? The vast majority of South Africans rely on government hospitals that are traditionally overcrowded and underfunded. A large number of these facilities have long waiting times but never the less are doing a satisfactory job. Some government hospitals in South Africa are better equipped. It is interesting to note that the world's first heart transplant operation was performed in South Africa. I am fortunate to be part of a private medical aid scheme so my experience cannot be seen to be typical of the healthcare sector in South Africa. Never the less as a private patient one would expect the quality of service to be top notch.

Customer communication

I was most impressed with the information that the cardiologist had prepared in the form of a booklet that explained in detail coronary heart disease. The booklet covered symptoms, causes, risk factors, complications, tests and diagnosis, treatments and drugs, lifestyle and home remedies and prevention. The information also covered post-surgery activities and life style changes. The scary thing was that I was not your typical candidate for heart surgery. I have never smoked; I eat fairly healthily, although I admit to liking chocolate, but who doesn't. I exercise regularly at the gym, have run many marathons and am not at all overweight. Prior to going into the operating theatre the surgeon reassured me by saying that if he could choose a patient to perform the surgery on I would be top of his list. My heart was apparently very strong probably as a result of the many marathons. He did inform me, however, that there was a 1% chance of failure during the operation but those were odds I could certainly take.

Operating Procedure

In the Quality profession we often talk about the need for operating procedures but this gave a whole new meaning to the terminology. The first heart bypass procedure was performed in 1960 but was not totally reliable. The procedure that is commonly used today was first performed in 1967. The surgeon

reassured me that he does heart by-pass operations every day and although it is a complicated process there was no need to worry. I thought at the time about the 1% scrap rate and wondered what the original failure rate would have been and if there was an opportunity for further improvement on the operating procedure. I concluded that as the incoming material (patient) for the surgeon was beyond his control then the operating procedure was probably as good as it can be. The surgeon was extremely competent, knowledgeable and experienced, exactly what every quality manager would be looking for in the delivery of a quality service. It was only after a follow up visit to the surgeon's rooms three weeks later did I discover that my surgeon had been Nelson Mandela's private surgeon for ten years. I knew then that I had been in good hands.

Daily Management activities

It was one thing being in the hands of an extremely competent surgeon but the next seven days would be spent in the Intensive Care Unit (ICU) and an opportunity to test the daily management skills of the nursing and support staff. ICU is not a pleasant experience with regard to the environment. It is noisy with high tech patient monitoring equipment constantly buzzing whenever an out of control situation occurs. This is the ultimate Statistical Process Control application. Of course reaction to any out of control situation is immediate with nurses, sisters and doctors on hand to rectify or adjust the process should anything be seen to be going wrong, a lesson that we could all learn from. I was under 24 hour surveillance and at the mercy of the ICU staff. I can't say that I experienced any incompetence but it was obvious that the more experienced nurses had perfected their skills. There was one particular nurse who was on night duty that really impressed me. She had apparently been brought out of retirement and was obviously dedicated to her profession. There were basic skill sets like changing the bed linen with the patient still in the bed, an art form executed with ease by the more experienced nursing staff. Every activity was planned and I quickly became accustomed to the daily blood pressure test, temperature reading, blood sample and ECG. There was quite a bit of cross functional activity and despite my weak condition the physiotherapist came daily to make sure that my lungs were kept clear and insisted that I regularly blow into a small plastic device to test my lung capacity. One anomaly in the ICU was that despite having a heart operation, the menu for daily meals contained many high cholesterol ingredients; obviously a general menu for all hospital patients and a lack of communication for individual patient needs was evident.

Conformance to requirements / specification

In a healthcare environment it is important to conform to standards and specifications and all daily activities were repeated with military precision. The keeping of records was seen as very important and data were collected at regular intervals and recorded on data sheets and made accessible to the doctors and ward sisters. One area that was frustrating for me was the amount of forms that had to be completed at various stages of the hospitalisation process. These forms were very comprehensive requesting personal information as well as previous medical history. These were requested on arrival at the hospital, attending the doctor's rooms, on admission to the holding ward and on admission to the operating theatre. I am sure that technology is available to put all this information on to a smartphone app and download it at each stage in the process.

Fitness for use

I thought of the various definitions of quality that would be applicable in a hospital environment. The obvious one would be "conformance to specification / standards". "Customer satisfaction" should also be at the top of the list, as should "continual improvement".

As I lay in the general ward recovering and waiting to be sent home I couldn't help but focus on a bracket on the wall in front of me that held a box of dispensable surgical gloves. It first bothered me that it was bare unpainted steel and in sharp contrast to the shiny white paper towel dispenser that was sitting next to it. (See the photo). I tested my quality perceptions by asking other patients that came into the ward over the period of time I lay there what was wrong with the dispenser? To my amazement no one saw anything wrong with the product. In the end I conceded that in the bigger picture of the quality performance shown through the various activities at the hospital this unpainted dispenser was **fit for use** and had no impact on the delivery of an excellent quality service.

Getting to grips...

By Dr Alastair Walker

As we move into a new year, Information Technology (IT) is once again going to continue impacting our lives, perhaps in ways that we can hardly anticipate.

To assist SAQI members to 'get to grips' with some of the key issues affecting the deployment of IT that supports our business and private IT related activities, we will be presenting a series of articles on IT related aspects, if taken seriously, these will certainly make a helpful contribution to mitigate some of the risks that accompany the use of IT.

This series will have two areas of focus in 2018, namely – aspects of IT involving the development of new or changed IT solutions, and secondly, aspects of information security.

1. Getting to grips .. Software management
2. Getting to grips .. Software requirements
3. Getting to grips .. Software design
4. Getting to grips .. Software implementation
5. Getting to grips .. Software release and deployment
6. Getting to grips .. Information security – technical issues 1
7. Getting to grips .. Information security – technical issues 2
8. Getting to grips .. Information security – organisational issues – 1
9. Getting to grips .. Information security – organisational issues – 2

In the first series, the topics will follow the well-known development lifecycle. We will draw some contrasts between the 'traditional' or formal software engineering approach to software development, and the more recent, but highly pervasive emphasis on 'agile' development methods. What makes these approaches so different? How substantive is the hype around the Agile methodology?

In the second series, we will look at some the practices supporting information security, from two perspectives. Firstly, to ask the question – what are the substantive technical issues that affect information security? Secondly, we will ask the question, what are the key organisational issues that must be addressed in order for information security to be effective?

ImproveIT Special Interest Group contact point

Make contact with the ImproveIT SIG by send an email to **improveit@saqi.co.za**

Leadership is Responsible for Achieving Good Corporate Governance Outcomes

By Terrance M. Booysen and peer reviewed by Professor Michael Katz (Chairman: ENS Africa)

With the media spotlight on the dismal state of governance in some of South Africa's public and private organisations, as well as many of its state-owned enterprises, there cannot be enough said about the enormous role and duties expected of the directors of an organisation. These select few people hold ultimate responsibility for the organisation which they serve, and they are accountable for a very broad spectrum of matters. These include the proper functioning of the organisation, the value it creates, its financial and non-financial performance, and its impact on those people and natural resources which are affected by the organisation.

As the well-known saying goes, *"With great power comes great responsibility"*, and as such directors should be constantly reminded of the liabilities which they face if they do not exercise their fiduciary and other duties in the best interests of the organisation on behalf of its key stakeholders.

These duties of directors are not imposed with the objective of complicating the management and operation of companies, nor are they intended to frustrate the pursuit by companies of their business objectives. They arise from the common law which is developed over centuries with the objective of protecting shareholders and other stakeholders from delinquent and non-performing directors and managers in the context of the separation between ownership and control. The duties which the law imposes on directors and senior managers is based on the concept of trust which is at the heart of the fiduciary and other duties which the law requires from directors and senior managers.

> *[B]y accepting their appointment to the position, directors tacitly indicate that they will perform their duties to a certain standard, and it is a reasonable assumption of the shareholders that every individual director will apply his or her particular skills, experience and intelligence appropriately and to the best advantage of the company."*
>
> ***Duties of Directors, Deloitte***
>
> ***(April 2013)***

The South African Companies Act, 2008 (the 'Act') partially codifies the directors fiduciary duties and the duties of care, skill and diligence. This codification is effectively a precis of the common law position which has developed over centuries and has been retained in the Act. The fiduciary duties include the duty to act in good faith and for a proper purpose in the best interests of the company and most importantly to avoid conflicts of interest. There are also a number of procedural provisions which reinforce the substantive obligations to avoid conflicts of interest. It is also essential that directors, particularly nominee directors, retain their independence and exercise an independent judgement in the best interests of the company. The law also requires directors to exercise their powers with proper care, skill, and diligence and for this purpose the minimum standard is an objective one. In addition to the fiduciary duties and the duty of care, skill, and diligence, there are a number of statutory duties.

At common law senior managers and executives have the same fiduciary duties and duties of care, skill, and diligence as those applicable to directors. This has been recognised in the Act by the designation of the term 'prescribed officers' which essentially comprises those executives who on a regular basis participate to a material degree in the exercise of general executive control over, and management of the whole, or a significant portion, of the business and activities of the company. Prescribed officers have the identical fiduciary duties as those of directors.

To this end, the King IV Code on Corporate Governance for South Africa, 2016™ ('King IV™') assists directors in their endeavours, by clearly guiding their behaviour. This latest iteration of the King Codes focuses on the *outcomes* of good governance, rather than stipulating a checklist of behaviours which must be followed. Each of the identified good governance outcomes in King IV™ is driven by various leadership responsibilities.

Leadership responsibilities of directors

In distilling the essence of director duties, King IV™ identifies four specific leadership responsibilities which are elevated above the many other duties and responsibilities placed on the directors of an organisation.

The first of these is the responsibility to set and steer the organisation's *strategic direction*. Ultimately, it is the organisation's strategy which will inform the action required to achieve the outcomes of good governance. Directors must share

their expertise and knowledge to assist the organisation's management as it continually assesses and responds to any challenges or negative consequences of the organisation's business activities.

The second fundamental responsibility of directors, as identified in King IV™, is approving the *organisational policies*, which give effect to the organisation's strategy.

> *"Sound governance is not some abstract ideal or utopian pipedream. Nor does it occur as a result of accidents or sudden outbreaks of altruism . . . It happens only when leaders lead with integrity, when directors actually direct and when major organisations are held to the highest standards of accountability by vigilant stakeholders and informed individuals."*
>
> *J Richard Finlay*

As soon as these policies (in the form of frameworks, standards and plans) are in place, the directors will be responsible for ensuring that management has implemented the necessary processes and recruited the requisite skills in order for the policies to be put into practice. Directors will then be able to fulfil the third of their identified responsibilities insofar as they oversee and monitor the implementation of policies on a regular basis.

Ultimately, the fulfilment of the previous three leadership responsibilities will culminate in the directors ensuring the accountability of the organisation through its *reporting to all of its stakeholders* – both internal and external. The report to stakeholders, in the form of the annual Integrated Report, provides the directors with an opportunity to again review the strategic direction of the organisation and to ensure that the necessary adjustments are made to relevant policies and procedures, amongst other key areas of reporting.

Good governance outcomes

In effectively practicing the key identified leadership responsibilities, directors will be able to benchmark their organisations against four good governance outcomes. The concepts of leadership responsibilities and good governance outcomes are directly proportional and are interrelated.

The four good governance outcomes, as espoused in King IV™, relate to whether or not the organisation: demonstrates effective control; performs well; adopts an ethical culture; and is legitimate. The legitimacy of an organisation is the most critical outcome of good governance and is informed by its reputation, as well as by the trust which its stakeholders place in it.

In order to be trusted, and to maintain a good reputation, the ethical tone of an organisation must be set from the top and must filter throughout all of its structures. Without sound, ethical leaders and practices, an organisation will not be sustainable. As King IV™ observes, effective and ethical leadership should complement and reinforce each other. If an organisation is to achieve its strategic objectives and positive outcomes, its leaders must act with competence, integrity, and transparency. As a natural result, the two remaining identified outcomes – *effective control* and *good performance* (the latter of which is measured from the point of view of the organisation's financial viability, as well as on the basis of its overall sustainability) will follow.

For further information contact:

CGF Research Institute (Pty) Ltd
Terrance M. Booysen (Chief Executive Officer)
Tel: +27 (11) 476 8264 / Cell: 082 373 2249
E-mail: **tbooysen@cgf.co.za**
Websites: **www.cgf.co.za** / **www.corporate-governance.co.za**

ENS Africa
Professor Michael Katz (Chairman)
Tel: +27 (11) 269 7600
E-mail: **mkatz@ENSafrica.com**
Website: **www.ensafrica.com**

Quality in Schools

Many of our readers are parents themselves or interact often with children. We have asked our education editor, a retired headmaster, to share thoughts on how to get Quality principles and practices instilled in young people.

By Richard Hayward

Get ready for a great year

For a child, the start of the new school year is often exciting. It's time to move up to a new Grade and maybe even go to a new school. It's time to make new friends, learn new subjects and even take up new sport activities. Those are the positives.

Yet there can also be the downside. There's the awkwardness and even – on occasion – a little bit of fear. The child might wonder what the teachers will be like and whether new friends will be found. A big question that's often asked is, "Will I cope with all the new demands of a being in a higher Grade?"

What can be done to ensure that it's a happy and successful year for a child?

A sure-fire way to success is to get into a routine. Have a routine and stick to it. Achievement and personal happiness follow.

Routine can be about simple things. Declan (his real name) is six and is in Grade One. After bath time, mom helps Declan prepare for his next day at school. She sits at his bed while Declan puts out his uniform and sports kit for the morning. Should Declan forget to put an item out, there's gentle questioning about what's still missing. This nightly routine teaches Declan independence in looking after himself. It also ensures (well, on most mornings!) a stressless start to the school day.

Parents have a huge part to play in getting a child into a daily routine. There's the daily routine of what time to get up in the morning and bedtime at night. Parents ensure that the child has a quiet place to do homework and study. There's the routine as to when and how long is study time. Then there are added extras such as the TV-watching routine on school days.

Children have a huge part in determining the daily routine. They will have been told by their teachers on how much time should be spent doing daily homework. Then there's the participation in the cultural and sport extra mural activities of the school.

Remember that the child also needs free time to simply do their favourite things.
Yes, it's great to draw up a daily routine but how do you stick to it?!

Routine requires willpower – the ability to stick to unpleasant tasks and avoid distractions. When such times happen, motivation can help boost flagging energy levels. There's a positive end result. So, for example, a child might decide not to watch a TV movie so as to work on an assignment that if done well, could score a distinction mark.

If we have too many things demanding strong willpower, "ego depletion" can set in. Exhaustion sets in and any well-intended routine simply collapses.

It's risky to run ourselves like machines. We need to 'switch off' every now and then; we need to restore our energy. Give ourselves enough sleep, healthy nourishment and rest. As productivity consultants David Allen and Tony Schwartz (Olson: 43) observe:

> *... human beings perform better when they have periods of activity followed by periods of rest. Working flat out is less efficient than it looks.*

The beginning of the year is like the start of a race. Get on your marks ... get ready ... and go! Stick to the routine for the year. When the race is over, the child will look at the end results and realise that a great race has been run.

Reference

Olson, D A 2017. *Success psychology of achievement*. London: Dorling: Kindersley.

back to contents page

SAQI Training Programme for 2018

All courses offered by the South African Quality Institute are presented in association with other course providers and are available to all organisations and individuals. SAQI can assist with the training of a company's workforce and all training packages can be run in-house at cheaper rates. A special discount applies to SAQI members. For more information or to register contact Vanessa du Toit at (012) 349 5006 or **vanessa@saqi.co.za**

1. SAQI reserves the right to change details of the programme without prior notice. **click here** for all course synopsis.
2. The courses listed below form part of a specific Certificate and all modules should be successfully completed to qualify for the Certificate.
3. Training is presented on the CSIR campus in the east of Pretoria.
4. All courses completed previously will receive credit when proof of successful completion is received.
5. All prices **include VAT.**

Code	Course	Days	Cost	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
L2	**Certificate in Quality Control for Manufacturing**	**10**	**22,590-00**										
B41	Introduction to Quality Control	2	5120-00	19-20				25-26				29-30	
B90	Introduction to Statistical Techniques	3	6175-00	21-23				27-29				31-2	
B91	Introduction to Statistical Process Control (SPC)	3	6175-00			12-14			23-25				19-20
B79	A3 Problem Solving	2	5120-00			15-16			26-27				21-23
L2	**Certificate in Quality Control for Services**	**10**	**22,590-00**										
B30	Introduction to Quality Control	2	5120-00	26-27						27-28			
B31	Introduction to Statistical Techniques	3	6175-00	28-2						29-31			
B32	Quality Evaluation and Assessment	2	5120-00			9-10					17-18		
B33	Coaching and Mentoring	1	1055-00			11					19		
B34	A3 Problem Solving	2	5120-00			12-13					20-21		
L3	**SAQI Certificate in Quality Assurance***	**13**	**28,765-00**										
B48	ISO Requirements 9001:2015	3	6175-00		26-28						5-7		
B24	Knowledge Management	2	5120-00			16-17						8-9	
B16	Internal Quality Auditing	3	6175-00			18-20						10-12	
B92	Advanced Quality Techniques	3	6175-00				14-16					22-24	
B77	Advanced Product Quality Planning (APQP)	2	5120-00				17-18					25-26	
L4	**SAQI Certificate in Quality Management***	**3**	**31,335-00**										
B38	Development of a QMS	3	6175-00				28-30						
B01	Cost of Quality	2	5120-00						9-10				
B58	New SA Excellence Model	2	5120-00						11-12				
B74/B76	Lean for Manufacturing/Service Industries	4	9800-00					19-22					
B93	Policy Deployment (Hoshin Kanri)	2	5120-00						30-31				

Construction specific

Code	Course	Days	Cost	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
L1	**SAQI Certificate in Quality Awareness for Construction**	**4**	**10,200-00**										
B101	Quality Awareness in Construction	1	2550-00	5			7		20				
B102	Introduction to Data Dossiers	1	2550-00	6			8		21				
B103	Introduction to Inspection Documentation	1	2550-00	7			9		22				
B104	Subcontractor Awareness	1	2550-00	8			10		23				
L2	**SAQI Certificate in Quality Assurance for Construction**	**10**	**22,590-00**										
B105	Introduction to Quality Control	3	6175-00	12-14			21-23		16-18		10-12		
B106	Introduction to Statistical Techniques	2	5120-00	15-16			24-25		19-20		13-14		
B107	Root Cause Analysis	3	6175-00			5-7		11-13	13-15		1-3		
B108	Technical Quality Documentation	2	5120-00			8-9		14-15	16-17		4-5		
L3	**SAQI Certificate in Advanced Quality Assurance for Construction**	**10**	**22,570-00**										
B109	ISO 9001: 2015 Requirements	3	6175-00									15-17	
B110	ISO 14001: Requirements	1	2550-00									18	
B111	OHSAS 18001 Requirements	1	2550-00									19	
B112	Integrated SHEQ Internal Audit	3	6175-00										5-7
B113	Cost of Quality	2	5120-00										8-9

For a list of other courses provided, please visit **www.saqi.co.za**
Inhouse courses provided to 10 or more delegates. Enquire from **vanessa@saqi.co.za**