



DISCOVER

EDUCATION AND CAREER
OPPORTUNITIES IN THE FOREST,
PULP & PAPER INDUSTRIES

PAPER

MANUFACTURERS ASSOCIATION
OF SOUTH AFRICA (PAMSA)

DISCOVER YOUR PASSION

DISCOVER YOUR POTENTIAL

DISCOVER PAPER

PAPER ROCKS

Paper is one of the most versatile inventions of our time. Not a day goes by without most people making use of paper, in one form or another. We read from it, we write on and print on it. In the electronic age we still rely on paper to provide a tangible, portable record of our messages, memories and transactions. We rely on paper for education, business, travel and fun – we even use it for money!

Apart from its versatility, paper is one of the most sustainable products that man has ever made. Contrary to popular belief, paper produced in South Africa is not made from the timber of rainforests or indigenous forests.

Trees are farmed or specially grown in the form of plantations. The timber is harvested from these plantations to make paper and other timber products, just as farmers would harvest crops of maize, wheat and sugarcane.

While the plantations are growing, they absorb carbon dioxide (the most abundant greenhouse gas) from the atmosphere, and release oxygen. (Remember that photosynthesis lesson in Science class?)

And just as there are numerous other environmental, economic and social benefits provided by paper manufacturing, so are there career possibilities in the industry.

PROMOTING PAPER

The Paper Manufacturers Association of South Africa (PAMSA), formed in 1992, promotes the interests and efforts of the South African pulp and paper industry. It provides a platform for the development and presentation of common views on pre-competitive industry issues, and engages stakeholders on matters from education to environment, and research to recycling.

PAMSA also oversees the efforts of the Paper Recycling Association of South Africa (PRASA) and the South African Tissue Manufacturers Association (SATMA).

PRASA is responsible for the promotion of paper recycling in South Africa through increased education and awareness initiatives. PRASA also aims to increase the recovery of paper and to increase the use of recovered paper in paper manufacturing.

PAMSA functions as secretariat to SATMA which contributes to the industry by encouraging manufacturers to maintain the legally required standards. To ensure compliance to regulated standards involving sheet count, core size and packaging, SATMA membership requires agreement to undergo an audit by an independent firm on a random basis. Tissue products include toilet paper rolls, toilet seat covers, hand towel and facial tissue and paper napkins. SATMA also concerns itself with creating greater consumer awareness about the legal requirements in relation to tissue and toilet paper products.

STORING CARBON: FIGHTING CLIMATE CHANGE.

- In South Africa, 600 million trees across 762,000 hectares are specifically grown for use in pulp and paper manufacture.
- Some 18 million tonnes of carbon dioxide (CO₂) are absorbed by these plantations annually. In addition to this annual absorption, there is a stock of some 180 million tonnes of CO₂ that remains stored in the unharvested plantations, making the industry a key player in fighting climate change.
- As massive sinks for atmospheric carbon, forests mitigate greenhouse gas emissions by absorbing CO₂ and releasing oxygen through the natural process of photosynthesis.
- In South Africa, we only harvest about 9% of the total plantation area annually for paper manufacture. This is replanted within the same year.
- Only mature trees are harvested, and each of these is replaced by saplings in the same year. Carbon absorption continues as the new trees grow and young trees are able to absorb carbon more rapidly than the older trees. Trees, and thus paper products, are a renewable resource.
- Even though not all of this is permanently kept out of the atmosphere, the fact that a significant proportion is retained for an extended period of time is of benefit to climate change mitigation.





PAMSA members

PAMSA currently represents more than 90% of the paper manufacturers in South Africa and these are:

Kimberly-Clark and its well-known global brands are an indispensable part of life for people in more than 175 countries. Every day, nearly a quarter of the world's population trust Kimberly-Clark's brands and the solutions they provide to enhance their health, hygiene and well-being. With brands such as Kleenex, Scott, Huggies, Pull-Ups, Kotex and Depend, Kimberly-Clark holds the number one or number two share position in more than 80 countries. To keep up with the latest Kimberly-Clark news and to learn more about the company's 140-year history of innovation, visit our website.

www.kimberly-clark.co.za

Toll-free number: 0800 115 711

Mondi South Africa, a division of Mondi Group Limited, was founded in 1967 and includes forestry, pulp, uncoated fine paper and containerboard operations. Its key products and operations include 264,000 hectares of plantations in KwaZulu-Natal and Mpumalanga provinces; hard- and soft-wood pulp and virgin containerboard production facilities at the Richards Bay pulp and containerboard mill in KwaZulu-Natal; and uncoated fine paper manufacturing facilities at the Merebank paper mill in Durban, KwaZulu-Natal.

www.mondigroup.com

Corporate office: + 27 (0)11 994 5400

Merebank: +27 (0) 31 451 2111

Richards Bay mill: +27 (0) 35 902 2111

Mpact (previously Mondi Packaging) is one of the largest paper and plastic packaging groups in Southern Africa. It has 29 operating sites, 22 of which are manufacturing operations, based in South Africa, Namibia, Mozambique and Zimbabwe, and a total of 3,500 employees.

www.mpact.co.za

Tel: +27 (0) 11 994 5500

Nampak, Africa's largest packaging company formed in 1968, offers a comprehensive product range, including paper, glass, metal and plastic. With a presence in over 21 countries, Nampak's paper products include cartons and labels, corrugated paper boxes and trays and paper sacks and trays as well as toilet tissue.

www.nampak.com

Tel: +27 (0) 11 719 6300

Sappi, a global leader in the production of coated fine paper and chemical cellulose, Sappi also has significant business in paper pulp, coated speciality paper, packaging grades and uncoated fine paper. With almost 15,000 employees working in nine countries on four continents, the group has customers in over 100 countries worldwide. Sappi also owns and manages 567,000 hectares of land certified by the Forest Stewardship Council in Southern Africa, 30% of which is managed for conservation and biodiversity purposes. The group has the capacity to produce over 6 million tons of paper and 3.4 million tons of pulp per year. Headquartered in Johannesburg, South Africa, Sappi maintains listings on the JSE Securities Exchange (SAP) and the New York Stock Exchange (SPP).

www.sappi.com

Tel: +27 (0) 11 407 8111





CAREER OPPORTUNITIES IN THE FORESTRY, PULP AND PAPER INDUSTRIES

It is difficult to imagine a world without pulp, paper and tissue products. Think about the cereal box on your breakfast table, the tissue products throughout your home, the posters you pass in the street, or even last night's movie tickets. These are just the obvious ones – there are many other products we do not always associate with the industry including viscose fabrics, cigarette filters and disposable nappies.

The production, supply and recycling of many of these items is dependent on South Africa's world-class forestry, pulp and paper industries. And holding it all together is a network of skilled and passionate people – people like you.

Perhaps you are most comfortable working in a team? Maybe you enjoy handling complex machinery or taking charge of administrative duties? Whatever your interest or inclination, whatever your level of capability, there is a career in our exciting industry for you.

Find a career that suits your passion, skills and capabilities in this competitive sector.



Fibre Processing & Manufacturing Sector Education & Training Authority

The Fibre Processing and Manufacturing Sector Education and Training Authority (FP&M SETA) was established on 1 April 2011 after government took a decision to cluster fibre processing and related manufacturing sub-sectors together in order to strengthen value-chain linkages.

The FP&M SETA mandate is

- To provide skills development services to the clothing, footwear, forestry, furniture, general goods, leather, packaging, print media, printing, publishing, pulp and paper, textiles and wood products sectors;
- To implement the objectives of the National Skills Development Strategy (NSDS III); and
- To address the critical and scarce skills needs (of which there is a significant overlap between the industries) through a consolidated skills development approach in order to build the capacity of the sector to become economically sustainable and globally competitive.

The FP&M SETA will build further on the good work done by the amalgamated SETAs (CTFL, FIETA and MAPPP SETA) during NSDS II and will continue to partner with its sub-sectors to address sector (and sub-sector specific) skills needs through the development of relevant qualifications and through the accreditation of credible institutions (both public and private) to assist employers with the implementation of workplace relevant training. Working together, the FP&M SETA, employers and providers will strive to successfully implement NSDS III in this sector.

In past years, the pulp and paper industry, in conjunction with the ex-FIETA, has developed qualifications and learnerships in a range of fields. The FP&M SETA will continue to assist this sub-sector (and its counterparts) to implement existing programmes and to develop new programmes aligned to the Occupational Qualifications Framework.

Contact Details:

Johannesburg: 011 234 2311

Durban: 031 702 4482

Cape Town: 021 447 3373

E-mail: info@fpmseta.org.za or visit www.fpmseta.org.za

FIND A PLACE FOR YOUR PASSION

A FUTURE IN THE FOREST AND FOREST PRODUCT SECTORS

The South African forest and forest product sectors play a major role in our economy, and rely on a renewable, biodegradable resource – trees. We do not harm our beautiful natural or indigenous forests, but farm eucalyptus and pine trees in plantations. These forests are managed intensively and sustainably, and we take special care in the conservation of water, soil and biodiversity. Eighty percent of these forests are FSC (Forest Stewardship Council) certified which means that they comply with strict environmental management standards as laid down by FSC.

DISCIPLINE	DESCRIPTION	STUDIES/EXPERIENCE REQUIRED
RESEARCH LABORATORY	Several disciplines work together on various aspects of the industry. These include improving fibre yield and biological pest control.	Biology, botany, chemistry, ecology, environmental science, forestry, genetics, geography, microbiology, wood science or zoology.
NURSERY	Propagation of plants, horticulture.	As mentioned above, depending on the position.
FORESTRY MANAGEMENT	Foresters and wood scientists are responsible for the ongoing management of plantation forests.	Biology, botany, forestry, geography or wood science.
ENVIRONMENT	Environmental planning, management and monitoring throughout the forestry process.	Biology, botany, chemistry, ecology, environmental science, forestry, genetics, geography, microbiology, wood science or zoology.
FORESTRY MACHINES AND EQUIPMENT	Operation and maintenance of machines used in the nursery, harvesting and silviculture process.	Mechanical, maintenance or technical background.
TRANSPORT AND LOGISTICS	Mechanics, drivers and engineers manage the essential and extensive transport and machinery infrastructure for the pulp and paper industry.	Mechanical engineering, maintenance or logistics background.

MEASURING UP TO THE HIGHEST STANDARDS



FSC is an independent, non-governmental, not for profit organisation established to promote the responsible management of the world's forests. South Africa has the highest level of international certification of its plantations in the world and a very stringent regulatory environment so sustainable forest management and stewardship of the plantation sector is better assured than anywhere else on earth. PAMSA members subscribe to the FSC's Chain of Custody which tracks FSC- certified material through the production process – from the forest to the consumer, including all successive stages of processing, transformation, manufacturing and distribution.

www.fsc.org



A PASSION FOR PULP, PAPER AND TISSUE MANUFACTURING

A small amount of the wood produced by the forestry industry is used for sawmilling and timber products such as mining supports and poles. Over two thirds go to pulp production and are used:

- For the creation of chemical cellulose used in fibres for the textile industry and speciality chemicals.
- In paper mills to produce various types of paper, cardboard and packaging, tissue and even artificial leather.

DISCIPLINE	DESCRIPTION	STUDIES/EXPERIENCE REQUIRED
PRODUCTION	People who have pursued mathematics and science as part of their studies are recruited for process trainee and engineering development programmes. Machine operators and various technical staff all play a major role in the production process.	Formal technical background.
PROCESS AND ENGINEERING	Industrial policy development, productivity and process optimisation, the design and construction of new manufacturing facilities, the modification and improvement of existing facilities and the supervision of all processes.	Civil, mechanical, chemical and electrical engineering.
SYSTEMS ENGINEERING	Control system expertise is needed to design and operate the process controls and computers that drive sophisticated paper machines.	Mechatronics, electronic engineering or computer science.
ENVIRONMENTAL ENGINEERING	Protecting public health and safety by creating effective pollution controls, reducing the environmental impact of mill operations, ensuring compliance with environmental regulations, and making sure that mills are safe, efficient and do not impact on local communities.	Chemical, environmental and civil engineering, biological and conservation sciences or chemistry.
QUALITY CONTROL	Stringent testing and evaluation of all pulp, paper, board and tissue products.	Industrial engineering, chemistry and statistics.
RESEARCH AND DEVELOPMENT	Finding the new ideas and improved applications that keep the paper industry on the cutting edge of technology; developing new pulp paper products and processes, finding solutions to environmental issues and creating more efficient production systems.	Physics, organic and polymer chemistry, chemical engineering, biochemistry, biology, mathematics, paper science, engineering or ecology.

A PART OF THE BIGGER PICTURE

The forestry, pulp and paper industries would not be where they are today without a diverse support network. The opportunities are limitless and we have listed just a few support service areas that may appeal to you.

DISCIPLINE	DESCRIPTION	STUDIES/EXPERIENCE REQUIRED
CORPORATE AFFAIRS	Internal and external communication with a wide variety of stakeholders.	Marketing, communication or technical.
FINANCE	Financial management, accounting, product and process financial controlling, budget management, financial planning, analysis and forecasting techniques.	Accountancy, finance or business science.
HUMAN RESOURCES	Industrial relations, training and development, health and safety, personnel administration, recruitment and staff selection and rural development.	Behavioural sciences, health, safety, administration and commerce.
LOGISTICS, SUPPLY CHAIN AND PROCUREMENT	Planning and purchasing of goods and services.	Industrial engineering or procurement.
MANAGEMENT	Overall responsibility for leading diverse teams and for determining the strategic direction of the business and/or divisions.	Management, behavioural sciences or business science.

Other fields include law, information technology, sales and marketing, research and development and maintenance, among many others.

A ROUTE FOR RECYCLING

The recovery and recycling of used paper products is very much part of our industry. Not only does recycled paper provide us with an alternative source of fibre for new paper products, it also provides informal employment for over 10,000 people who collect used paper and sell it to recycling centres.

With education being a key aspect of recycling, PRASA has embarked on an initiative with the Department of Basic Education to include paper recycling as part of the school's curriculum. This project, aimed at learners from foundation to senior primary phase, will be piloted in Gauteng primary schools where the subject matter will be integrated into Mathematics, Life Orientation and Environmental Education subjects.

Each of the modules will incorporate various aspects of recycling – sustainable forest management, paper manufacturing, packaging and the four Rs (Reduce, Re-use, Recycle and Recover).

Recycling also creates income generation opportunities and as a result, PRASA in partnership with the Fibre Processing and Manufacturing (FP&M) Seta, offers regular three-day entrepreneurship training courses aimed at assisting people set up small recycling businesses.

Recycling is a real need. And makes a real difference.

- Paper can be recycled at least seven times. An important reason for paper recycling is that it extends the period over which the carbon in the paper is locked out of the atmosphere.
- For every one metric tonne of paper recycled, the energy saved in the paper production process is sufficient to provide electricity to 512 average-sized homes for a year.
- We need fewer trees to meet our needs when we recycle.
- With 65% of recovered paper used as raw material in paper mills, more than half of the country's paper mills depend on recycled fibre and a number of them use it as their only fibre source.
- Paper recovery and recycling reduces costs to local municipal authorities and frees up space at landfill sites.
- Recycling creates jobs for many in the informal and formal sector.

www.prasa.co.za



A PATH OF OPPORTUNITY

So have we sparked your interest? The next step is to explore the various courses, qualifications and learnerships offered by our academic partners.

Please note that this information is simply a summary of qualifications available. Certain terms and conditions, and additional criteria may apply with each institution. Please contact the relevant institution for further information.

National Certificate

Through the Umfolozi and Ekurhuleni East Further Education and Training colleges, PAMSA offers a National Certificate Vocational (NCV) qualification in process plant operations and pulp and papermaking technology from levels two to four. The NCV 4 qualification is equivalent to a matric and also allows learners university entry after completion. The duration of the course is three years.

Through the course, students acquire the necessary skills to control sophisticated equipment, machinery and systems used in the pulp manufacturing process. The course sets a benchmark for other sectors, including the sugar, petrochemical and chemical processing industries, and facilitates entry into various career paths.

CAREER PATH

The NCV 4 Process Operations certificate is the pulp and paper industry's preferred qualification for people responsible for operations in the manufacture of paper products such as newsprint, facial and toilet tissue, container board and many more. On graduation, learners may be eligible for employment in a number of different positions in the pulp and paper industry.

The primary function of the people completing this course is to control the sophisticated equipment, machinery and systems used in manufacturing processes.

Similar to an academic matric, the NCV 4 puts learners in a position to apply at most universities to further their studies.

ENTRY REQUIREMENTS

To qualify for this course, learners should be fully literate and have a formal qualification equivalent to Grade 9 or National Qualification Framework (NQF) level 1. Previous studies in mathematics and science would be a great help to students entering this field of study.

BURSARY INFORMATION

Bursaries are available for individuals who meet the criteria. Please contact Umfolozi College or Ekurhuleni East College for further information on bursaries.

REGISTRATION INFORMATION

Umfolozi College – Mandeni and Esikhawini campuses

Contact **EPL du Toit**

Tel: +27 (0) 32 456 3626

Email: info.umfan@feta.gov.za

Ekurhuleni East College – KwaThema campus

Contact **Dr Francois F Gouws**

Tel: +27 (0) 11 730 6600

Email: francoisg@eec.edu.za





National Diploma: Pulp and Paper Technology

Pulp and Paper Technology is a specialist field of chemical engineering which involves the study of the processes required for the conversion of raw materials such as wood, into pulp and paper products. The opportunity to study for a National Diploma in Pulp and Paper Technology is available at UNISA on a part-time basis and the Durban University of Technology (DUT) full time. The three-year programme comprises 24 months of theoretical tuition and 12 months of appropriate industrial training.

CAREER PATH

The aim of this qualification is to produce competent pulp and paper technicians whose responsibilities would include managing and optimising the pulp and paper process. It will enable learners to achieve the competencies required to work safely and effectively in the pulp and paper industry and equip learners with the knowledge and skills that are immediately relevant in the workplace.

A person who wants to embark on a career in Pulp and Paper Technology must have a basic knowledge of chemistry and physics, and an aptitude for solving problems logically.

Please visit www.unisa.ac.za and www.dut.ac.za for entry requirements and bursary information.

REGISTRATION INFORMATION

UNISA

Caroline Mashego | Coordinator: Pulp & Paper Technology

Department of Civil & Chemical Engineering

Tel: 011 471 2144

Fax: 011 471 3054

Email: ufengin@unisa.ac.za

DUT

Seshna Sewsanker | Department of Pulp & Paper Technology

Tel: 031 373 2123

Fax: 031 373 2376

Email: jimmyp@dut.ac.za

BTech: Pulp and Paper Technology

On completion of a National Diploma or degree in engineering or science, a candidate may enrol for the Bachelor's degree in Pulp and Paper Technology. This programme is designed to prepare students for positions in technical management or as process technologists. The degree is presently offered on a two-year part-time basis.

DUT offers an off-campus BTech (Pulp and Paper) to employees and service companies in the industry.

ENTRANCE REQUIREMENTS

In order to register for the BTech (Pulp and Paper), a candidate must have one of the following:

- 1) A University of Technology (formally Technikon) National Diploma in Engineering or Science, or
- 2) A University degree in Engineering or Science, or
- 3)
 - i. An N6 Diploma in Pulp or Paper, or
 - ii. An N6 in an Engineering field plus N4 Pulp or Paper, plus Fluid Mechanics III and Thermodynamics III from a Technikon or
- 4) A Government Certificate of Competency.

Prospective students with qualifications in other disciplines must present their qualifications and work experience, together with a letter from their employer motivating their registration on the BTech (Pulp and Paper).



Bachelor of Science Degree

The University of KwaZulu-Natal offers wood pulping as well as papermaking technology modules as a part of the fourth year chemical engineering studies with the aim to introduce candidates to papermaking science and technology and expose students to the relative size and importance of the industry in South Africa.

ENQUIRIES

**Iain Kerr | Department of Chemical Engineering
University of KwaZulu-Natal**

Tel: 031 260 2186

Fax: 086 510 7398

Email: kerr@ukzn.ac.za

Forging your future in research

PAMSA's Process Research Unit (PRU) develops, manages and expands the National Research Framework, a regional research initiative which develops the capabilities of the industry's technical resources. The PRU engages with major South African and international universities to further grow the network of institutions that can support and broaden the South African knowledge base in appropriate fields.

"The pulp, paper and packaging industry is brimming with opportunity, especially in the areas of research into green and sustainable energy technologies, innovative processes and how we can explore the potential of one of our world's most natural and renewable resources – the tree," says Mike Nash, head of PRU.

PRU also facilitates a postgraduate training programme for Bachelor of Science chemical engineering graduates to pursue related studies at a Masters level through the Universities of Stellenbosch, Pretoria and KwaZulu-Natal. These universities collaborate with PAMSA to develop suitable projects that will further the effectiveness and technical knowledge of the industry. Links are also being further developed with Durban University of Technology and UNISA to explore increased collaboration.

ENTRY REQUIREMENTS

- BScEng (chemical engineering) candidates interested in enrolling for MScEng studies in fields that satisfy the aims of the pulp, paper and packaging industry.
- A good academic record with a minimum of 60% average in the third and final years of study.
- Applicants must have completed their studies in five years or less.
- Candidates should indicate their areas of interest. For example, energy efficiency, renewable energy and biopolymers.

Successful candidates will gain advanced skills during their post-graduate training in fields such as wood science, chemical analysis, separation techniques, process modelling and material and energy balances. Not only will they have access to an industrial mentor during their studies, but they will be placed in an engineer-in-training programme at one of PAMSA's member companies on successful completion of their degree.

ENQUIRIES

Applications – which should include a full CV and a motivation letter – can be directed to:

Olga Booyse (details on the back of this brochure)

For more information about following a career in forestry, pulp and paper, visit the following websites:

www.dut.ac.za | www.unisa.ac.za | www.fpmseta.org.za | www.ukzn.ac.za | www.thepaperstory.co.za



Qualifications Ladder

This Qualifications Ladder will be implemented over a period of time.

PAMSA Short Courses

A number of short courses are also available to industry employees, industry suppliers and consultants.

These include:

- Cleaner production
- Hands-on pulp and paper making
- Wet end chemistry
- Paper machine operations
- Tissue machine operations
- Pulp mill operations
- Refining basics

- Process control optimisation
- High yield pulping
- Effective paper machine maintenance
- Pumps: maintenance, design and reliability

ENQUIRIES

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University of KwaZulu-Natal**

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