

CHEMICAL & LIFE SCIENCES



U+SP Think bigger with SP

Applied Chemistry
Biomedical Science
Chemical Engineering
Food Science & Technology
Optometry
Perfumery & Cosmetic Science

SINGAPORE
POLYTECHNIC | **SP**

I CAN ENHANCE THE QUALITY OF LIFE



At the School of Chemical & Life Sciences (CLS), you can unlock the mysteries of science and create wonders to better life.

Our robust curriculum, coupled with strong links to industries, gives you an edge in your future workplace. You acquire lifelong skills that empower you to take on and excel in various fields, like applied chemistry, energy and chemicals, food and nutrition, healthcare, medical technology, as well as cosmetics and perfumery!

When you graduate, you can contribute to discoveries that enhance the quality of life.

WHY CLS?

In CLS, we pride ourselves on optimising the human factor.

Our lecturers are well trained in teaching pedagogies and are richly experienced in their respective fields. Most importantly, they are passionate in their shared purpose to mould you into competent adults ready for the world.

We have alumni who are now award winning scientists. Our graduates have also been admitted to read chemical engineering, chemistry, dentistry, life sciences, medicine and pharmacy at various local and overseas universities.

Our graduates do not just excel in the academic field. Some have gone on to become successful entrepreneurs, having benefitted from being exposed to numerous industry-related projects and collaborations during their studies.

Do not simply take our word for it. Go through this brochure to find out exactly what our graduates think of our courses and lecturers.



DIPLOMA IN APPLIED CHEMISTRY

(DAPC – S64)

Discover the mysterious and captivating properties of chemicals, drugs and materials by going on an exciting applications-based journey with us. The Diploma in Applied Chemistry (DAPC) is the first diploma in Singapore to focus on building a strong foundation in chemistry which provides you the versatility to work in various chemistry-related sectors.

The DAPC course provides the learning environment for you to conduct research on, synthesise and test new chemicals, drugs and materials. By the end of the course, you will be able to solve problems independently and experience what it is like to work at the frontiers of investigative chemistry.

Through a specially developed progressive learning strategy, you will be imparted with knowledge acquisition skills on fundamental chemistry principles during your first year. In the second year, you are equipped with the skills to perform chemical investigations and interpretation of results using real-life situations. During your third year, you will be able to develop and optimise new products or methods to improve lives, hence igniting your creativity skills.

Upon graduation, you will be ready to contribute to the chemical, pharmaceutical and materials-related industries or further your studies in tertiary institutions.

SCHOLARSHIPS AVAILABLE

- Singapore Polytechnic Scholarships
- A*STAR Science Award
- Mitsui Chemicals Process Technology Study Award
- MOH Holdings Scholarships

COURSE HIGHLIGHTS

- Only diploma in Singapore on Applied Chemistry
- Choose from one of these specialisations: Pharmaceutical Science, Industrial Chemistry, or Materials Science
- Course is recognised by the UK Royal Society of Chemistry (RSC) and the UK Institute of Materials, Minerals and Mining (IOM3)
- Work with state-of-the-art equipment in well-designed laboratory suites: Analytical & Forensic Chemistry, Pharmaceutical Chemistry and Materials Science
- Internship or dedicated research experience at local and overseas institutions



ENTRY REQUIREMENTS

Range of Net 2019 JAE ELR2B2: 4 to 10
Aggregate Type: ELR2B2-C

SUBJECT	GRADE
English Language	1 - 7
Mathematics (Elementary / Additional)	1 - 6
One of the following 3rd relevant subjects:	1 - 6

- Biology
- Biotechnology
- Chemistry
- Food & Nutrition
- Physics
- Science (Chemistry, Biology)
- Science (Physics, Biology)
- Science (Physics, Chemistry)

COURSE MODULES

The Diploma in Applied Chemistry is a three-year full-time programme.

FIRST YEAR

Common

- Basic Mathematics
- Biochemistry & Cell Biology
- Chemical Safety & Biosafety
- Chemistry I
- Chemistry II

- Communicating for Project Effectiveness (Proposal)
- Critical & Analytical Thinking
- Elective 1
- Engineering Mathematics

- Instrumental Analysis
- Microbiology & Genetics
- Narrative Thinking
- Process Principles
- Scientific Applications

SECOND YEAR

Common for Industrial Chemistry and Pharmaceutical Science Specialisation

- Chemistry III
- Communicating for Professional Effectiveness
- Elective 2
- Engineering Mathematics II
- Environmental and Water Technology
- Forensic Chemistry
- Further Chemistry I
- Further Chemistry II
- Laboratory Management

- Pharmacology & Pharmaceutical Chemistry
- Quality Assurance & Statistics
- Social Innovation Project

Materials Science Specialisation

- Chemistry III
- Communicating for Professional Effectiveness
- Elective 2
- Engineering Mathematics II
- Further Chemistry I

- Materials Characterisation & Failure Analysis
- Materials Laboratory Skills
- Materials Processing
- Materials Processing Skills
- Mechanics of Materials
- Metallic and Ceramic Materials
- Polymeric Materials
- Quality Assurance & Statistics
- Social Innovation Project

THIRD YEAR

Industrial Chemistry Specialisation

- Advanced Instrumental & Lab Techniques
- Advanced Organic Chemistry
- Elective 3
- cGMP and Validation
- Internship Programme
- Petrochemicals and its Applications
- Specialty Chemicals

Pharmaceutical Science Specialisation

- Advanced Instrumental & Lab Techniques
- Advanced Organic Chemistry
- Biopharmaceutical Engineering
- cGMP and Validation
- Elective 3
- Internship Programme
- Pharmaceutical Engineering

Materials Science Specialisation

- Advanced Materials
- Capstone Project
- Coating, Adhesives & Elastomers
- Elective 3
- Internship Programme
- Laboratory Management
- Materials Innovation and Design

Electives

The SP elective framework offers students options to pursue their passion and / or meet different career needs, and is an integral part of the holistic education we seek to provide to our students. The learning experiences of this elective framework help students in their development as self-directed, versatile, life-long learners, which are essential in today's volatile and changing societal as well as occupational landscape.

For a list of electives offered, please visit www.sp.edu.sg

All full-time diploma students are required to take two compulsory Education and Career Guidance Modules in SP. Students will take SP101A: Education and Career Guidance 1 – Personal Development (30 hours) in their first year. In their second or third year, students will take SP201A: Education and Career Guidance 2 – Career Development (30 hours).

All students are required to take one compulsory Sports for Life (SFL) module for one semester in their first year in SP. In their second and third year, students may sign up for SFL module as an elective.

CAREER OPTIONS

- Application Chemist
- Assistant Engineer
- Chemical Technologist
- Chemist
- Environmental, Safety & Health Officer
- Materials Characterisation / Failure Analysis Specialist
- Process Designer
- Purchaser / Procurement Engineer
- Quality Assurance / Quality Control Laboratory Analyst
- Regulatory & Compliance Officer
- Research Assistant
- Sales / Business / Marketing Executive
- Technical Specialist

FURTHER STUDIES

Many of our graduates gain entry into degree programmes at local or overseas universities. Related degree programmes include Chemistry, Pharmaceutical Science, Materials Science and Engineering.



“

Chemistry is fun! With like-minded peers who are also passionate about chemistry, I am truly blessed to have graduated from DAPC. Broad-based learning in SP has definitely sharpened my skills and knowledge to face the constantly changing future.

”

Chua Rui Fen

DAPC Gold Medallist, Class of 2019, who is now pursuing a Chemistry and Biological Chemistry degree at Nanyang Technological University



DIPLOMA IN BIOMEDICAL SCIENCE

(DBS – S98)

Biomedical Science is all about the science that 'saves lives' – from the research activities for knowledge and application in the life sciences and bio-pharmaceutical industries, to medical testing for diagnosis, management and prevention of diseases.

Our students can choose from four exciting specialisations:

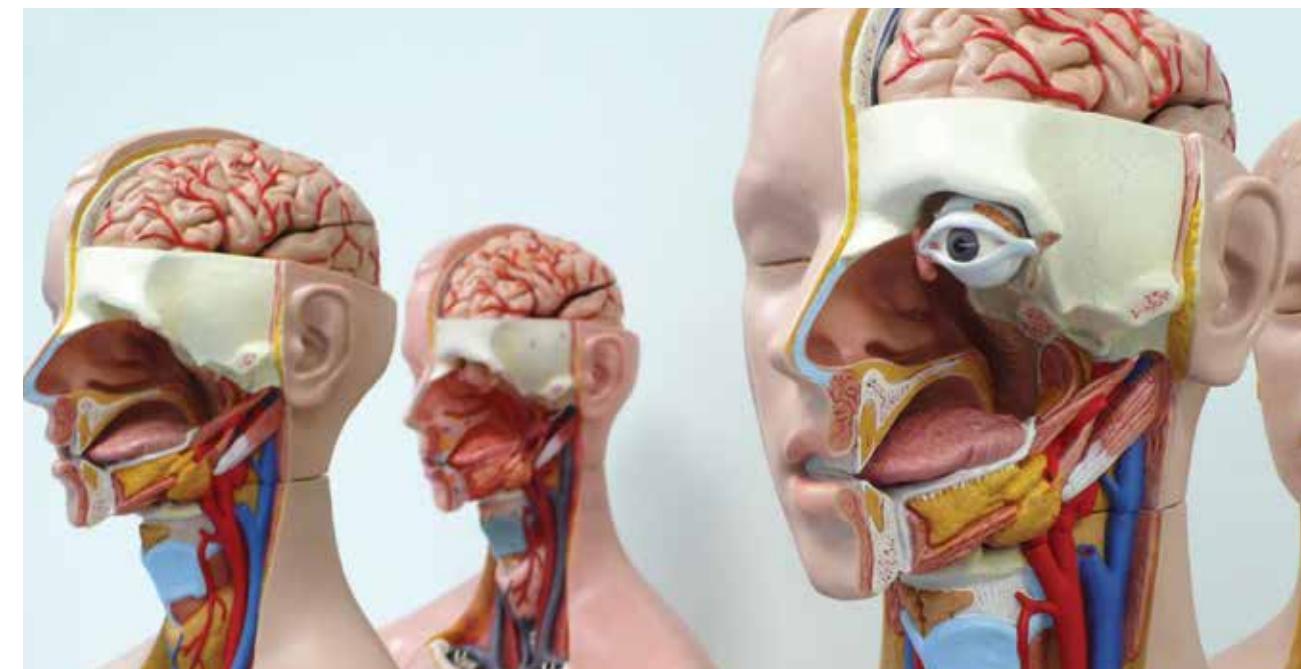
- Medical Technology – Medical testing for diagnosis and management of human diseases
- Cardiac Technology – Cardiac functions testing for diagnosis and intervention of heart related diseases
- Biomedical Research – Biomedical research on the science of human diseases and development of diagnostic tools
- Biotechnology – Focuses on life sciences that exploit biological processes of living organisms to improve the quality of human life

The only diploma programme in Singapore recognised by international accreditations from:

- American Society for Clinical Pathology (ASCP) USA
- Institute of Biomedical Science (IBMS) UK

SCHOLARSHIPS AVAILABLE

- Singapore Polytechnic Scholarships
- A*STAR Science Award
- MOH Holdings Scholarships



COURSE HIGHLIGHTS

- Internship at top-notch laboratories including A*STAR institutes and top-ranked overseas universities
- Training partnership with the National Heart Centre Singapore for Cardiac Technology specialisation provides an authentic learning experience
- Head-start to a career in an MNC: Internship at multinational biopharmaceutical companies
- Opportunity to expand interests through elective modules in Forensic Biology, Cytogenetics or Introductory Pharmacology

ENTRY REQUIREMENTS

Range of Net 2019 JAE ELR2B2: 3 to 7

Aggregate Type: ELR2B2-C

SUBJECT	GRADE
English Language	1 - 7
Mathematics (Elementary / Additional)	1 - 6
One of the following 3rd relevant subjects:	1 - 6
• Biology	
• Biotechnology	
• Chemistry	
• Food & Nutrition	
• Physics	
• Science (Chemistry, Biology)	
• Science (Physics, Biology)	
• Science (Physics, Chemistry)	

COURSE MODULES

The Diploma in Biomedical Science is a three-year full-time programme.

FIRST YEAR

Common

- Basic Mathematics
- Biochemistry & Cell Biology
- Chemical Safety & Biosafety
- Chemistry I

- Chemistry II
- Communicating for Project Effectiveness (Proposal)
- Critical & Analytical Thinking
- Elective 1

- Engineering Mathematics
- Instrumental Analysis
- Microbiology & Genetics
- Narrative Thinking
- Process Principles
- Scientific Applications

SECOND YEAR

Medical Technology Specialisation

- Chemistry III
- Clinical Chemistry
- Communicating for Professional Effectiveness
- Elective 2
- Elective 3
- Flow Cytometry and Microscopy
- Haematology
- Histological Techniques in Pathology
- Immunology
- Medical Microbiology
- Molecular Techniques
- Physiology
- Project
- Social Innovation Project

- Elective 2
- Elective 3
- Flow Cytometry and Microscopy
- Haematology
- Histological Techniques in Pathology
- Immunology
- Medical Microbiology
- Molecular Techniques
- Physiology
- Social Innovation Project

- Medical Microbiology
- Molecular Techniques
- Physiology
- Social Innovation Project

Biotechnology Specialisation

- Bioprocessing and Biologics Technology
- CGMP & Validation
- Chemistry III
- Communicating for Professional Effectiveness
- Elective 2
- Elective 3
- Flow Cytometry and Microscopy
- Histological Techniques in Pathology
- Immunology
- Molecular Techniques
- Physiology
- Project
- Social Innovation Project

Biomedical Research Specialisation

- Chemistry III
- Clinical Chemistry
- Communicating for Professional Effectiveness
- Elective 2
- Elective 3
- Flow Cytometry and Microscopy
- Haematology
- Histological Techniques in Pathology
- Immunology

Cardiac Technology Specialisation

- Chemistry III
- Clinical Chemistry
- Communicating for Professional Effectiveness

THIRD YEAR

Medical Technology Specialisation

- Blood Banking
- Internship Programme
- Med Lab Science in Practice
- Project

Biotechnology Specialisation

- Health, Safety and Environmental Management
- Internship Programme
- Project
- Stem Cell and Tissue Engineering

- Diagnostic & Interventional Cardiac Catheterisation
- ECG & Rhythm Disorders
- Echocardiography
- Electrophysiology & Pacemakers
- General Cardiology & Cardiac Disorders 1
- General Cardiology & Cardiac Disorders 2

Biomedical Research Specialisation

- Final Year Project
- Health, Safety and Environmental Management
- Internship Programme
- Stem Cell and Tissue Engineering

Cardiac Technology Specialisation

- Applied Cardiac Anatomy & Physiology
- Clinical Applications of Cardiac Drugs
- Clinical Attachment

Electives

The SP elective framework offers students options to pursue their passion and / or meet different career needs, and is an integral part of the holistic education we seek to provide to our students. The learning experiences of this elective framework help students in their development as self-directed, versatile, life-long learners, which are essential in today's volatile and changing societal as well as occupational landscape.

For a list of electives offered, please visit www.sp.edu.sg

All full-time diploma students are required to take two compulsory Education and Career Guidance Modules in SP. Students will take SP101A: Education and Career Guidance 1 – Personal Development (30 hours) in their first year. In their second or third year, students will take SP201A: Education and Career Guidance 2 – Career Development (30 hours).

All students are required to take one compulsory Sports for Life (SFL) module for one semester in their first year in SP. In their second and third year, students may sign up for SFL module as an elective.



CAREER OPTIONS

- Administrator (Medical Industry)
- Assistant Biotechnologist
- Assistant Quality Control Laboratory Analyst
- Clinical Research Coordinator
- Phlebotomist
- Cardiac Technologist
- Medical Technologist
- Quality Assurance Assistant
- Research Assistant
- Sales and Marketing Executive
- Technical Specialist

FURTHER STUDIES

A high percentage of our graduates is offered admission to local universities. You may also be granted direct entry into the second or third year of degree programmes in Australian and British universities. You also have the flexibility to pursue other disciplines such as Medicine at the National University of Singapore (NUS) or Nanyang Technological University (NTU), Dentistry and Pharmacy at NUS, as well as Biomedical Sciences and Chinese Medicine at NTU.

“

I thoroughly enjoyed my three years in DBS. Lectures were taught in preparation for the challenges in the real clinical world. Besides developing my interest in healthcare, the many internship opportunities inspired me to be part of the bio-business industry in the near future.

”

Fan Chongyue

DBS Gold Medallist, Class of 2019



DIPLOMA IN

CHEMICAL ENGINEERING

(DCHE – S70)

Chemical engineering is the discipline which integrates sciences with applied mathematics and engineering principles. It takes laboratory ideas and turns them into value-added products using cost-effective, safe and cutting-edge processes for the chemical industry.

Some famous chemical engineers in history include John McKeen, who designed the first industrial-scale production of penicillin that saved thousands of soldiers' lives during World War II; Carl Bosch who invented the Haber-Bosch process to produce ammonia, a critical ingredient in synthetic fertilisers that enable us to produce enough food to feed the Earth's growing population.

Join us if you aspire to be like the above prominent chemical engineers who make real, significant impact in improving our world for a better tomorrow!

SCHOLARSHIPS AVAILABLE

- Singapore Polytechnic Engineering Scholarships
- A*STAR Science Award
- Mitsui Chemicals Scholarships



COURSE HIGHLIGHTS

- First diploma programme in Singapore to be fully accredited by the Institution of Chemical Engineers, IChemE, United Kingdom. The full IChemE accreditation signifies worldwide recognition by universities and industries of the rigour and quality of our programme
- Triple-winner of IChemE's Excellence in Education and Training award, which signifies the outstanding quality of our programme
- First chemical engineering diploma course in the world to adopt the Conceive-Design-Implement-Operate (CDIO) education framework which is in collaboration with top universities such as Massachusetts Institute of Technology, United States and Tsinghua University, China
- Internship at local and overseas chemical processing companies and institutions

ENTRY REQUIREMENTS

Range of Net 2019 JAE ELR2B2: 5 to 13
Aggregate Type: ELR2B2-C

SUBJECT	GRADE
English Language	1 - 7
Mathematics (Elementary / Additional)	1 - 6
One of the following 3rd relevant subjects:	1 - 6
<ul style="list-style-type: none"> • Biology • Biotechnology • Chemistry • Design & Technology • Physics • Science (Chemistry, Biology) • Science (Physics, Biology) • Science (Physics, Chemistry) 	

COURSE MODULES

The Diploma in Chemical Engineering is a three-year full-time programme.

FIRST YEAR

- Basic Mathematics
- Chemical Engineering Thermodynamics
- Chemistry I
- Chemistry II
- Communicating for Project Effectiveness (Report)
- Critical and Analytical Thinking
- Engineering Mathematics I
- Fluid Flow and Equipment
- Heat Transfer and Equipment
- Introduction to Chemical Engineering
- Laboratory and Process Skills 1
- Laboratory and Process Skills 2
- Materials for Design
- Narrative Thinking

SECOND YEAR

- Chemical Engineering Design Calculations
- Chemical Product Design and Development
- Chemical Reaction Engineering
- Communicating for Professional Effectiveness
- Elective 1
- Elective 2
- Engineering Mathematics II
- Introduction to Chemical Product Design
- Process Instrumentation and Control
- Process Operation Skills 1
- Process Operation Skills 2
- Separation Processes and Simulation
- Social Innovation Project

THIRD YEAR

- Biopharmaceutical Engineering
- Capstone Project
- Elective 3
- Internship Programme
- Pharmaceutical Engineering
- Plant Design, Economics and Sustainable Development
- Process Plant Safety and Engineering Ethics

Electives

The SP elective framework offers students options to pursue their passion and / or meet different career needs, and is an integral part of the holistic education we seek to provide to our students. The learning experiences of this elective framework help students in their development as self-directed, versatile, life-long learners, which are essential in today's volatile and changing societal as well as occupational landscape.

For a list of electives offered, please visit www.sp.edu.sg

All full-time diploma students are required to take two compulsory Education and Career Guidance Modules in SP. Students will take SP101A: Education and Career Guidance 1 – Personal Development (30 hours) in their first year. In their second or third year, students will take SP201A: Education and Career Guidance 2 – Career Development (30 hours).

All students are required to take one compulsory Sports for Life (SFL) module for one semester in their first year in SP. In their second and third year, students may sign up for SFL module as an elective.

CAREER OPTIONS

- Assistant Biotechnologist
- Business Development Executive
- Engineering, Procurement and Construction (EPC) Engineer
- Health, Safety Environmental (HSE) Officer
- Laboratory Technologist
- Logistics and Supply Chain Specialist
- Maintenance Specialist / Technician
- Process Engineer / Technician / Technologist
- Production Technician
- Project Management Engineer
- Quality Assurance / Control Engineer
- Sales and Marketing Engineer

FURTHER STUDIES

Each year, more than half of our graduates are successfully accepted into well-established local and overseas universities. Many of them are also offered module exemptions or direct entry into the second or third year of their university degree programmes.

Our graduates can also apply for either a 2.5-year degree programme in chemical engineering that is offered by Technical University of Munich (TUM), Germany and Singapore Institute of Technology (SIT) or a 2-year degree programme in chemical engineering that is offered by Newcastle University (NU), United Kingdom and SIT.



“ DCHE has provided me with a valuable learning experience over three years. The training facilities on campus allowed me to hone my problem-solving skills in chemical process operations. This was definitely useful when I embarked on my final-year project at the prestigious Institute of Materials Research and Engineering (IMRE) within the Agency for Science, Technology and Research (A*STAR), where I got to explore ways to improve the efficiency of Solar Cell technology. ”

Songkiat Ow Shiyuan

DCHE Gold Medallist and Lee Kuan Yew Award Winner, Class of 2019



DIPLOMA IN

FOOD SCIENCE & TECHNOLOGY

(DFST – S47)

Want to uncover the mysteries of food or excite the taste buds of consumers? Come join the Diploma in Food Science & Technology (DFST) at SP.

You will discover the world of food - from raw ingredients, processes, packaging to finished consumer products, through our carefully designed curriculum, with a strong emphasis on design thinking and industry-linked projects.

Upon graduation, you will be equipped with relevant knowledge and skills to join the ranks of food technologists to innovate and produce foods that are safer, healthier and tastier!

SCHOLARSHIPS AVAILABLE

- Singapore Polytechnic Scholarships
- A*STAR Science Award
- BASF Scholarship
- MOH Holdings Scholarships
- SFMA – Pek Cheng Chuan Scholarship
- SIFST Best Student Award cum Rintoul Memorial Scholarship
- Tai Hua Scholarship



COURSE HIGHLIGHTS

- Well-equipped facilities such as the Food Creation Lab, Dough and Roll Studio, Food Analysis Lab, Food Processing & Packaging Lab and Biotransformation Lab
- Work with the Food Innovation & Resource Centre (FIRC) at SP, a one-stop centre that provides integrated consultancy, advice and training for food companies
- This course is certified by the International Union of Food Science & Technology (IUFoST) for having met international standards and guidelines
- Opportunities to acquire a global perspective on research, product development and food operations through overseas internships or learning journeys
- Successful commercialisation of a portfolio of food products including the XO Kaya, Lemon & Kalamansi drink etc

ENTRY REQUIREMENTS

Range of Net 2019 JAE ELR2B2: 6 to 12
Aggregate Type: ELR2B2-C

SUBJECT	GRADE
English Language	1 - 7
Mathematics (Elementary / Additional)	1 - 6
One of the following 3rd relevant subjects:	1 - 6
<ul style="list-style-type: none"> • Biology • Biotechnology • Chemistry • Food & Nutrition • Physics • Science (Chemistry, Biology) • Science (Physics, Biology) • Science (Physics, Chemistry) 	

COURSE MODULES

The Diploma in Food Science & Technology is a three-year full-time programme.

FIRST YEAR

- Basic Mathematics
- Biochemistry & Cell Biology
- Chemistry I
- Chemistry II
- Chemical Safety & Biosafety
- Communicating for Project Effectiveness (Proposal)
- Critical & Analytical Thinking
- Elective 1
- Engineering Mathematics
- Instrumental Analysis
- Microbiology & Genetics
- Narrative Thinking
- Process Principles
- Scientific Applications
- Sports for Life

SECOND YEAR

- Chemistry III
- Elective 2
- Elective 3
- Food Chemistry
- Food Ingredients
- Food Microbiology
- Food Preservation
- Food Process Engineering
- Food Product Development & Packaging
- Nutrition
- Social Innovation Project
- Statistics & Analytics

THIRD YEAR

- Communication for Professional Effectiveness
- Food Safety & Quality Management
- Internship Programme
- Nutrition across the Lifespan
- Process Design & Implementation
- Project

Electives

The SP elective framework offers students options to pursue their passion and / or meet different career needs, and is an integral part of the holistic education we seek to provide to our students. The learning experiences of this elective framework help students in their development as self-directed, versatile, life-long learners, which are essential in today's volatile and changing societal as well as occupational landscape.

For a list of electives offered, please visit www.sp.edu.sg

All full-time diploma students are required to take two compulsory Education and Career Guidance Modules in SP. Students will take SP101A: Education and Career Guidance 1 – Personal Development (30 hours) in their first year. In their second or third year, students will take SP201A: Education and Career Guidance 2 – Career Development (30 hours).

All students are required to take one compulsory Sports for Life (SFL) module for one semester in their first year in SP. In their second and third year, students may sign up for SFL module as an elective.



CAREER OPTIONS

- Assistant Food Technologist / Food Technologist
- Food Audit Officer
- Food Hygiene Officer
- Food Safety Officer
- Laboratory Technologist
- Market Development Executive
- Packaging Technologist
- Quality Assurance / Quality Control Executive
- Research & Development Technologist
- Sales & Marketing Executive

FURTHER STUDIES

You can apply for related degree programmes at local or overseas universities such as the Bachelor of Science – Food Science and Technology at the National University of Singapore; or the Degree in Biological Sciences with a Second Major in Food Science and Technology or the Degree in Chemical and Biomolecular Engineering with a Second Major in Food Science and Technology or the Degree in Chemistry and Biological Chemistry with a Second Major in Food Science & Technology at Nanyang Technological University. You can also apply for admission to the Bachelor of Food Technology (Honours) programme or the Bachelor of Professional Studies in Culinary Arts Management offered by the Singapore Institute of Technology.

“

The DFST curriculum is extensive, with a focus on experiential and applied learning, which prepares me for the food industry. This three-year journey has further fueled my passion for food, science and technology!

”

Yong Hon Keat

DFST Gold Medallist, Class of 2019



DIPLOMA IN

OPTOMETRY

(DOPT – S67)

Take a moment to consider the importance of eyesight and the impact it has once it is lost. Indeed, caring for the health of others is a noble calling, especially when it comes to something as important as eye care.

The scope of Optometry includes managing refractive errors (such as myopia and presbyopia) through spectacle and contact lens correction, and detecting common eye diseases (such as cataract, diabetic retinopathy and glaucoma).

Our three-year Diploma in Optometry (DOPT) course aims to produce professionally competent optometrists who are in good demand. Due to the high prevalence of myopia in children and a rapidly ageing population, quality optometrists are highly sought after.

SCHOLARSHIPS AVAILABLE

- Singapore Polytechnic Scholarships
- MOH Holdings Scholarships



COURSE HIGHLIGHTS

- First tertiary institution in Singapore to offer this course since 1994
- Our students start working with patients in the first year and continue with greater responsibilities in the subsequent years
- Excellent clinical and laboratory facilities and SP Optometry Centre provide you with hands-on experience using state-of-the-art precision instruments and equipment
- Register as a provisional optometrist with the Optometrists and Opticians Board after graduation
- Regular industrial attachments at hospitals, optometric practices, contact lens or ophthalmic lens companies to widen your scope and experience in optometry
- Semester-long continuous internship in the eye care industry is a key component
- Opportunities for overseas exposure via community service projects or attachments to optometry schools and research institutions abroad

ENTRY REQUIREMENTS

Range of Net 2019 JAE ELR2B2: 5 to 12

Aggregate Type: ELR2B2-C

SUBJECT	GRADE
English Language	1 - 7
Mathematics (Elementary / Additional)	1 - 6
One of the following 3rd relevant subjects:	1 - 6
• Biology	
• Biotechnology	
• Chemistry	
• Food & Nutrition	
• Physics	
• Science (Chemistry, Biology)	
• Science (Physics, Biology)	
• Science (Physics, Chemistry)	

Applicants with severe vision impairment may encounter difficulties meeting the course requirements and expectations. Please refer to the Ministry of Health (MOH) website on 'Fitness to Practice' for registered Optometrists.

COURSE MODULES

The Diploma in Optometry is a three-year full-time programme.

FIRST YEAR

- Basic Mathematics
- Clinical Optometry 1
- Clinical Optometry 2
- Communicating for Personal and Team Effectiveness
- Critical and Analytical Thinking
- Engineering Mathematics
- Geometrical & Physical Optics
- Human Physiology & Cell Biology
- Narrative Thinking
- Ocular Anatomy & Physiology
- Ophthalmic Dispensing
- Ophthalmic Optics
- Physiological & Visual Optics

SECOND YEAR

- Binocular Vision
- Chemistry I
- Chemistry II
- Clinical Optometry 3
- Clinical Practice 1
- Contact Lens Practice 1
- Contact Lenses
- Elective 1
- Elective 2
- Ocular Disease 1
- Ocular Pharmacology
- Social Innovation Project

THIRD YEAR

- Clinical Practice 2
- Contact Lens Practice 2
- Elective 3
- Internship Programme
- Low Vision & Community Health Optometry
- Ocular Disease 2
- Paediatric Optometry

Electives

The SP elective framework offers students options to pursue their passion and / or meet different career needs, and is an integral part of the holistic education we seek to provide to our students. The learning experiences of this elective framework help students in their development as self-directed, versatile, life-long learners, which are essential in today's volatile and changing societal as well as occupational landscape.

For a list of electives offered, please visit www.sp.edu.sg

All full-time diploma students are required to take two compulsory Education and Career Guidance Modules in SP. Students will take SP101A: Education and Career Guidance 1 – Personal Development (30 hours) in their first year. In their second or third year, students will take SP201A: Education and Career Guidance 2 – Career Development (30 hours).

All students are required to take one compulsory Sports for Life (SFL) module for one semester in their first year in SP. In their second and third year, students may sign up for SFL module as an elective.



CAREER OPTIONS

- Lens Consultant
- Marketing and Customer Development Executive
- Optometrist at retail optical outlets
- Optometrist at Hospitals and Eye Clinics
- Professional Affairs Executive
- Research Optometrist

FURTHER STUDIES

SP Optometry diploma allows direct entry into the second or third year of overseas optometry degree programmes. You are also eligible to apply for many non-optometry degree programmes at local universities, including Medicine at NUS and Biological Sciences at NTU.



DOPT's clinical training sessions have trained me to be proficient in the detection and diagnosis of eye diseases. There were also various modes of teaching, including realistic case-based learning and numerous practical sessions. As a future Optometrist, I believe that I can save sight, lives and make a difference in the world.



Shazwan Tan Wen Hao

DOPT Gold Medallist, Class of 2019



DIPLOMA IN

PERFUMERY & COSMETIC SCIENCE

(DPCS – S38)

If you have the passion to:

- formulate products that can give you age-defying looks;
- uncover the secrets of fragrance creation;

you are cordially invited to begin your journey with the Diploma in Perfumery & Cosmetic Science (DPCS) at SP.

It is the only local diploma programme that provides training in chemistry with applications in perfumery and cosmetic science. You will have an integrated learning experience where you will build a strong chemistry foundation and apply your knowledge in specific applications using your senses.

With this unique training in SP, your skills will be highly sought after not just locally but internationally in the lucrative and recession-resistant fragrance and cosmetic industries.

SCHOLARSHIPS AVAILABLE

- Singapore Polytechnic Scholarships
- Society of Cosmetic Scientists (Singapore) Merit Award
- A*STAR Science Award



COURSE HIGHLIGHTS

- Specialisation in Chemistry, Perfumery and Cosmetic Science
- Get trained in our state-of-the-art Perfumery and Cosmetic Science Centre
- Collaborate with industry partners to create and commercialise student formulations, for example, the Romance Singapore series of perfumes was created by our students
- Real and exciting experiences in making perfumes and cosmetic products, producing fragrance raw materials through organic synthesis and distilling essential oils from plant extracts
- Internship with perfumers, chemists, product formulators or dermatologists at chemical companies or cosmetic companies or fragrance and flavour houses
- Be awarded with a training certificate in 'Analytical Instrumentation and Laboratory Techniques' accredited by the Royal Society of Chemistry (RSC), UK

ENTRY REQUIREMENTS

Range of Net 2019 JAE ELR2B2: 6 to 12

Aggregate Type: ELR2B2-C

SUBJECT	GRADE
English Language	1 - 7
Mathematics (Elementary / Additional)	1 - 6
One of the following 3rd relevant subjects:	1 - 6
• Biology	
• Biotechnology	
• Chemistry	
• Food & Nutrition	
• Physics	
• Science (Chemistry, Biology)	
• Science (Physics, Biology)	
• Science (Physics, Chemistry)	

COURSE MODULES

The Diploma in Perfumery & Cosmetic Science is a three-year full-time programme.

FIRST YEAR

- Basic Mathematics
- Biochemistry & Cell Biology
- Chemical Safety & Biosafety
- Chemistry I
- Chemistry II
- Communicating for Project Effectiveness (Proposal)
- Critical & Analytical Thinking
- Elective 1
- Engineering Mathematics
- Instrumental Analysis
- Microbiology & Genetics
- Narrative Thinking
- Process Principles
- Scientific Applications

SECOND YEAR

- Chemistry III
- Chemistry of Cosmetic Raw Materials
- Communicating for Professional Effectiveness
- Elective 2
- Elective 3
- Engineering Mathematics II
- Formulation and Colloidal Science of Cosmetics
- Fragrance and Flavour Chemistry I
- Further Chemistry I
- Further Chemistry II (for SENSE)
- Laboratory Management (for SENSE)
- Quality Assurance & Statistics
- Social Innovation Project
- Traineeship with Project (for APPEAL)

THIRD YEAR

APPEAL Programme

- Extended Internship Programme
- Fragrance and Flavour Chemistry II
- Safety Assessment, GMP and Cosmetic Regulations

SENSE Programme

- Extended Internship Programme
- Fragrance and Flavour Chemistry II
- Project
- Safety Assessment, GMP and Cosmetic Regulations

Electives

The SP elective framework offers students options to pursue their passion and / or meet different career needs, and is an integral part of the holistic education we seek to provide to our students. The learning experiences of this elective framework help students in their development as self-directed, versatile, life-long learners, which are essential in today's volatile and changing societal as well as occupational landscape.

For a list of electives offered, please visit www.sp.edu.sg

All full-time diploma students are required to take two compulsory Education and Career Guidance Modules in SP. Students will take SP101A: Education and Career Guidance 1 – Personal Development (30 hours) in their first year. In their second or third year, students will take SP201A: Education and Career Guidance 2 – Career Development (30 hours).

All students are required to take one compulsory Sports for Life (SFL) module for one semester in their first year in SP. In their second and third year, students may sign up for SFL module as an elective.

CAREER OPTIONS

- Chemist
- Formulator
- Fragrance Evaluator
- Procurement Executive
- Product Application Chemist
- Product Development Specialist
- Quality Assurance / Quality Control Laboratory Analyst
- Regulatory and Product Safety Personnel
- Sales / Business / Marketing Executive
- Trainee / Assistant Perfumer

FURTHER STUDIES

Many of our graduates gain entry into degree programmes at local or overseas universities. You can pursue further studies in the areas of cosmetic science, perfumery and chemistry.



“DPCS gave me a platform to understand the industry better. During my 10-month internship in the Applied Research Department of Symrise Singapore, I did research on fragrance encapsulation technology and even conducted test evaluations for an overseas client. The internship deepened and nurtured my passion for cosmetics science.

I look forward to fulfilling my dream of becoming a formulation scientist, a role that will allow me to create personal or home care products that can make a difference to the lives of people. I also envision myself creating low-cost household products for developing countries with hygiene issues.”

Lim Jing Ying

DPCS Gold Medallist, Class of 2018, who is pursuing a degree in Chemistry and Biological Chemistry at Nanyang Technological University



Singapore Polytechnic
500 Dover Road Singapore 139651

For more information regarding entry requirements and course information, please contact:

School of Chemical & Life Sciences

Tel: (65) 6775 1133

Fax: (65) 6772 1976

Email: contactus@sp.edu.sg

Website: www.sp.edu.sg/cls

For the latest updates on Singapore Polytechnic, follow us on:



[@singaporepoly](https://www.instagram.com/singaporepoly)



[fb.com/singaporepolytechnic](https://www.facebook.com/singaporepolytechnic)



[@singaporepoly](https://twitter.com/singaporepoly)



[youtube.com/singaporepolytechnic](https://www.youtube.com/singaporepolytechnic)



[@singaporepoly](https://www.snapchat.com/add/singaporepoly)