School of Applied Science

www.rp.edu.sg/sas

Dream of making a difference through cutting-edge technology and scientific breakthroughs? This is where your journey begins - get started at RP School of Applied Science (SAS). With five dynamic diploma programmes and a Common Science Programme, this is where you can develop your passion for applied science into real-world innovations and solutions.

- Common Science Programme
- Diploma in Applied Chemistry
- Diploma in Biological Sciences
- Diploma in Biomedical Science
- Diploma in Environmental & Marine Science
- Diploma in Pharmaceutical Science

Common Science Programme R59

Intrigued by the science behind everything? Take time to investigate.

Have a knack for science but unsure which field to venture into? Gain a firm scientific foundation by exploring the various disciplines offered by School of Applied Science (SAS). Discover your strengths and explore a wide range of career options available, empowering you to make a well-informed decision when selecting your diploma!

- Take more time to uncover your true passion in science
- Get to know different disciplines of science through common foundational modules
- Choose from five SAS diplomas

What you will learn

General Modules

- Critical Thinking and Problem Solving Skills
- Designing Your Impact
- Designing Your Life (Future-Ready I)
- Designing Your Life (Personal Growth I)
- Effective Workplace Communication
- Innovation and Practice
- Singapore, the World and I

Discipline Modules

Semester 1

- General and Physical Chemistry
- Laboratory Practices and Safety
- Mathematics for Applied Science
- Molecular Cell Biology and Biochemistry
- Sustainability and Climate Change

At the **end of Semester 1**, you will opt for one of the following diplomas/cluster:

- Applied Chemistry (R17)
- Biological Sciences (R16)
- Biomedical Science (R14)
- Environmental & Marine Science (R62)
- Pharmaceutical Science (R22)
- *Biological Sciences Cluster*

Semester 2

If you choose to enter the ***Biological Sciences Cluster***, you will take the following modules:

- Anatomy and Physiology
- Data Analytics
- Microbiology
- Organic and Inorganic Chemisty

You will opt for one of the following **diplomas at the end of semester 2**:

- Biological Sciences
- Biomedical Science
- Pharmaceutical Science

After being placed in one of the SAS diploma programmes, you will study the modules specific to that programme.

"My experience in the Common Science Programme (CSP) has been truly inspiring, expanding my understanding of the diverse diplomas offered by SAS. The various CSP events, from mass briefings to workshops, helped me discover my passions and interests, ultimately guiding me to pursue a Diploma in Biomedical Science (DBMS). I am grateful for the opportunities CSP provided, from discovering new things to becoming a Peer Support Leader for my juniors. I will always cherish the holistic experiences I gained through CSP, DBMS and RP, as well as the wonderful friends and supportive lecturers I met along the way!"

LOH WEI WEN, JACI, 2024 Graduate

Diploma in
Applied Chemistry R17

Unleash your inner chemist! Create the future of cosmetics, forensics and materials.

Scan to learn more

Chemistry meets innovation in our Diploma in Applied Chemistry. Gain hands-on experience with exciting advancements in cosmetic, forensic and materials chemistry. Unleash your potential and design your destiny with us as you delve into the elements that power our world. Join the adventure where every reaction is a step towards your success!

- **Broad Spectrum of Opportunities:** Discover the fascinating world of chemistry with applications that span across cosmetic, flavours/fragrances, pharmaceutical, and petrochemical industries. Your expertise will be the secret ingredient in everything from perfumes to life-saving drugs
- **Hands-On Chemical Mastery:** Experience unparalleled training in state-of-the-art laboratories such as RP-Shimadzu S.T.A.R Laboratory and Materials Innovation Hub (Mi-Hub). Your journey from curious student to industry expert begins here
- **Industry-Relevant Curriculum and Professional Network:** Learn through a tailored curriculum and gain real-world experience with leading companies via internships and projects, paving the way to a dynamic chemical career

What you will learn

General Modules

- Critical Thinking and Problem Solving Skills
- Designing Your Impact
- Designing Your Life (Future-Ready I)
- Designing Your Life (Future-Ready II)
- Designing Your Life (Personal Growth I)
- Designing Your Life (Personal Growth II)
- Effective Workplace Communication
- Innovation and Practice
- Singapore, the World and I

Discipline Modules

- 3D Design and Printing
- Analytical Chemistry
- Cosmetic Product Design and Development
- General and Physical Chemistry
- Forensic Science
- Formulation Science and Technology
- Laboratory Practices and Safety
- Laboratory Skills in Analytical Testing
- Laboratory Skills in Chemistry
- Materials Processing and Characterisation
- Materials Science
- Mathematics for Applied Science
- Microbiology
- Molecular Cell Biology and Biochemistry
- Organic and Inorganic Chemistry
- Petrochemical Technology
- Polymer Chemistry
- Quality Assurance and Data Analytics
- Specialty Chemicals
- Sustainability and Climate Change
- Sustainable Production and Products

Elective Modules

Customise your learning pathways by selecting **ONE** of the following options:

Option A: Select Elective modules totalling 12 Modular Credits (MCs) from the list of modules in applicable Minor programmes and/or from the List of Electives below

Option B: Select a Minor Programme

Option C: Select a CET-based Certificate programme and/or Elective module(s) from the list of modules in applicable Minor programmes or from the List of Electives (only for eligible students)

List of Electives:

- Anatomy and Physiology
- Current Good Manufacturing Practice
- Clinical Development to Commercial Success
- Drug Design and Medicinal Chemistry
- Inventory Management
- Procurement and Supplier Development
- Wafer Fabrication and Packaging

Industry Orientation Programme Modules

Option 1: One-Semester Industry Immersion Programme

- Project

And select one module from the list below:

- Corporate Innovation Immersion Programme
- Entrepreneurial Immersion Programme
- Industry Immersion Programme

Option 2: Two-Semester Industry Immersion Programme

- Industry Immersion Programme
- Industry Immersion Programme II

Career Opportunities

As a Diploma in Applied Chemistry graduate, you can look forward to exciting careers in diverse sectors such as chemicals, cosmetics, pharmaceuticals, petrochemicals, electronics, and materials sectors. Equip yourself to take on roles such as:

- Assistant Chemist
- Assistant Researcher
- Laboratory Technologist
- Materials Specialist
- Process Technician
- Product Specialist
- Purchaser
- Quality Assurance/Control Specialist

"RP has played a pivotal role in my growth, with curated lessons that emphasised collaboration and presentations. The guidance from my lecturers not only deepened my knowledge of chemistry but also pushed me beyond my comfort zone. I'm honoured to represent RP in WorldSkills Singapore 2023 for Chemical Laboratory Technology. The strong foundation I've built at RP will propel me toward my future aspirations in Pharmaceutical Engineering, which I plan to pursue next."

CHIA HUI YING, 2024 Graduate

Diploma in
Biological Sciences R16

Explore the fascinating world of life sciences.

This diploma programme unlocks exciting career paths for you in biotechnology, agritech and food science. Start with foundational subjects like molecular biology, microbiology, genetics, and anatomy, and build a strong theoretical foundation and practical skills from day one.

- Master essential techniques in applied microbiology, molecular biology and cell culture to excel in real-world applications and boost your career prospects
- Choose a Major in your second year to tailor your education: Biotechnology or Food & Agricultural Science, aligning your studies with your career aspirations
- Earn industry-recognised certifications like Workforce Skills Qualifications Food Safety Level 1, gain experience through research apprenticeships, and pursue diverse careers in biotechnology, agrifood or food manufacturing

What you will learn

General Modules

- Critical Thinking and Problem Solving Skills
- Designing Your Impact
- Designing Your Life (Future-Ready I)
- Designing Your Life (Future-Ready II)
- Designing Your Life (Personal Growth I)
- Designing Your Life (Personal Growth II)
- Effective Workplace Communication
- Innovation and Practice
- Singapore, the World and I

Discipline Modules

- Anatomy and Physiology
- Data Analytics
- General and Physical Chemistry
- Laboratory Practices and Safety
- Mathematics for Applied Science
- Microbial and Cellular Applications in Food and Health
- Microbiology
- Molecular Cell Biology and Biochemistry
- Organic and Inorganic Chemistry
- Recombinant DNA Technologies
- Sustainability and Climate Change

Major Modules

Major in Biotechnology

- Analytical Chemistry
- Biological Applications in Health and Diagnostics
- Biopharmaceutical Production
- Cell Culture
- Genetics
- Genomics
- Immunology
- Protein Technologies
- Research Apprenticeship Programme in Bio-Innovation

Major in Food & Agricultural Science

- Agricultural Technology
- Agri-science and Tissue Culture
- Analytical Chemistry
- Food and Nutritional Sciences
- Food Processing and Packaging
- Genetics
- Quality Assurance in Agricultural and Food Products
- Research Apprenticeship Programme in Sustainable Food Innovation

Elective Modules

Customise your learning pathways by selecting **ONE** of the following options:

Option A: Select Elective modules totalling 16 Modular Credits (MCs) from the list of modules in the Minor programmes that are applicable to the Diploma and/or from the List of Electives below

Option B: Select a Minor Programme and an elective module of 4 MCs from the list of modules in the Minor programmes that are applicable to the Diploma or from the List of Electives below

Option C: Select a CET-based Certificate programme and/or Elective module(s) from the list of modules in the Minor programmes that are applicable to the Diploma or from the List of Electives below (only for eligible students)

List of Electives for Major in Biotechnology:

- Agri-science and Tissue Culture
- Aquaculture Farm Management and Operations
- Aquaculture Genetics
- Aquatic Animal Health and Nutrition
- Digital Health Innovations and Applications

List of Electives for Major in Food & Agricultural Science:

- Aquaculture Farm Management and Operations
- Aquaculture Genetics
- Aquatic Animal Health and Nutrition
- Cell Culture
- Digital Health Innovations and Applications
- Immunology
- Protein Technologies

Industry Orientation Programme Modules

Option 1: One-Semester Industry Immersion Programme

- Project

And select one module from the list below:

- Corporate Innovation Immersion Programme
- Entrepreneurial Immersion Programme
- Industry Immersion Programme

Option 2: Two-Semester Industry Immersion Programme

- Industry Immersion Programme
- Industry Immersion Programme II

Career Opportunities

You can explore careers in various life sciences industries, including biotechnology, biopharmaceuticals, medical research, agrifood, food product development & manufacturing. Consider opportunities in roles such as:

- Agriculturist
- Assistant Agricultural Scientist
- Assistant Biotechnologist
- Assistant Food Technologist
- Biopharmaceutical Production Technician/ Senior Technician
- Food and Microbiology Specialist
- Health Education Officer
- Laboratory Assistant/Technologist
- Market Development Executive
- Quality Control Assistant Laboratory Analyst
- Quality Assurance Assistant
- Research Assistant/Technologist

"In this course, my favourite module is the Food Innovation and Sustainability module (renamed as Research Apprenticeship Programme in Sustainable Food Innovation). Collaborating with industry to innovate new sustainable food allowed me to apply my food processing knowledge and lab skills effectively. The Problem-based Learning (PBL) approach simplified complex concepts while active participation in lab workshops and field trips greatly enriched my learning experience."

CHUA RUI-EN, 2023 Graduate

Diploma in **Biomedical Science** R14

Turn your fascination with the human body's responses to illness into a career in the biomedical science and healthcare sector!

Scan to learn more

To understand the nature of diseases and how to combat them, you must first comprehend how diseases develop in the human body. The Diploma in Biomedical Science (DBMS) will equip you with the essentials of human anatomy, the molecular and physiological basis of different diseases and a methodological approach to detecting diseases.

- Receive extensive hands-on training through the two Majors – Biomedical Research and Medical Laboratory Technology
- Pursue a rewarding career in biomedical science and healthcare through DBMS
- Engage in a 20-week Industry Immersion Programme with organisations such as A*STAR Institute of Molecular and Cell Biology, Genome Institute of Singapore, and public/private hospitals

What you will learn

General Modules

- Critical Thinking and Problem Solving Skills
- Designing Your Impact
- Designing Your Life (Future-Ready I)
- Designing Your Life (Future-Ready II)
- Designing Your Life (Personal Growth I)
- Designing Your Life (Personal Growth II)
- Effective Workplace Communication
- Innovation and Practice
- Singapore, the World and I

Discipline Modules

- Anatomy and Physiology
- Data Analytics
- General and Physical Chemistry
- Genetics
- Immunology
- Laboratory Practices and Safety
- Mathematics for Applied Science
- Microbiology
- Molecular Cell Biology and Biochemistry
- Organic and Inorganic Chemistry
- Sustainability and Climate Change

Major Modules

Major in Biomedical Research

- Advanced Cell Biology
- Bioinformatics
- Developmental Anatomy and Neuroscience
- Epidemiology and Public Health
- Genomics
- Medical Microbiology
- Oncology and Therapeutics
- Techniques in Molecular Biology

Major in Medical Laboratory Technology

- Bioinformatics
- Clinical Chemistry
- Diagnostic Pathology
- Epidemiology and Public Health
- Haematology
- Medical Laboratory Management
- Medical Microbiology
- Techniques in Molecular Biology

Elective Modules

Customise your learning pathways by selecting **ONE** of the following options:

Option A: Select Elective modules totalling 12 Modular Credits (MCs) from the list of modules in the Minor programmes that are applicable to the Diploma and/or from the List of Electives below

Option B: Select a Minor Programme

Option C: Select a CET-based Certificate programme and/or Elective module(s) from the list of modules in the Minor programmes that are applicable to the Diploma or from the List of Electives below (only for eligible students)

List of Electives for Major in Biomedical Research:

- Current Good Manufacturing Practice
- Diagnostic Pathology
- Digital Health Innovations and Applications
- Environment, Health and Safety
- Haematology
- Needs Assessment
- Principles of Chemical and Biological Drug Action

List of Electives for Major in Medical Laboratory Technology:

- Advanced Cell Biology
- Current Good Manufacturing Practice
- Developmental Anatomy and Neuroscience
- Digital Health Innovations and Applications
- Environment, Health and Safety
- Needs Assessment
- Oncology and Therapeutics
- Principles of Chemical and Biological Drug Action

Industry Orientation Programme Modules

Option 1: One-Semester Industry Immersion Programme

- Project

And select one module from the list below:

- Corporate Innovation Immersion Programme
- Entrepreneurial Immersion Programme
- Industry Immersion Programme

Option 2: Two-Semester Industry Immersion Programme

- Industry Immersion Programme
- Industry Immersion Programme II

Career Opportunities

You can pursue a fulfilling career in healthcare institutions, research laboratories, and companies that develop and distribute biomedical products. Look forward to roles such as:

- Biomedical Research Assistant
- Laboratory Technologist
- Medical and Laboratory Product Specialist
- Medical Technologist
- Quality Control/Quality Assurance Officer

"My time at RP has been transformative, thanks to supportive lecturers and peers. I developed essential skills such as leadership and communication, which will be pivotal in my future endeavours. The dynamic curriculum at RP challenged me to think on my feet, keeping me deeply engaged in every lesson. RP has become an integral part of who I am and will remain so for years to come."

BRIAN TAN JIN HOCK, 2024 Graduate

Diploma in **Environmental & Marine Science** R62

Be at the forefront of protecting the environment and marine life for future generations!

Climate change presents a host of challenges to humanity. These include increased wildfires, rising sea levels, declining clean water supplies, reduced agricultural and seafood yields, and disease outbreaks. Passionate about making a positive impact amidst these challenges? Join us to become the next generation of leaders in sustainability!

- Attain knowledge in an extensive range of topics such as climate change, systematics, terrestrial and marine ecology, aquatic animal health, wildlife management, environmental management and testing, sustainability reporting, and circular economy
- Gain essential knowledge and skills to help you conserve and manage complex ecosystems through interactions with terrestrial and aquatic wildlife during external field trips and visits to RP's Rain Garden and aquaculture research facility, Aquaria
- Intern at organisations such as DHI Water & Environment, Mandai Wildlife Group, National Environment Agency, National Parks Board, Prime Aquaculture, S.E.A. Aquarium, and Tropical and Marine Science Institute

What you will learn

General Modules

- Critical Thinking and Problem Solving Skills
- Designing Your Impact
- Designing Your Life (Future-Ready I)
- Designing Your Life (Future-Ready II)
- Designing Your Life (Personal Growth I)
- Designing Your Life (Personal Growth II)
- Effective Workplace Communication
- Innovation and Practice
- Singapore, the World and I

Discipline Modules

- Aquaculture Farm Management and Operations
- Aquaculture Product Quality and Food Safety
- Aquatic Animal Health and Nutrition
- Data Analytics
- Environmental Management and Assessment
- Environmental Testing and Analysis
- Environment, Health and Safety
- General and Physical Chemistry
- Laboratory Practices and Safety
- Marine Biology
- Marine Ecology and Conservation
- Mathematics for Applied Science
- Microbiology
- Molecular Cell Biology and Biochemistry
- Resource Management and Circular Economy
- Sustainability and Climate Change
- Sustainability Reporting and Carbon Management
- Systematics and Biodiversity
- Terrestrial Ecology and Wildlife Management

Elective Modules

Customise your learning pathways by selecting **ONE** of the following options:

Option A: Select Elective modules totalling 12 Modular Credits (MCs) from the list of modules in the Minor programmes that are applicable to the Diploma and/or from the List of Electives below

Option B: Select a Minor Programme

Option C: Select a CET-based Certificate programme and/or Elective module(s) from the list of modules in the Minor programmes that are applicable to the Diploma or from the List of Electives below (only for eligible students)

List of Electives:

- Agri-Science and Tissue Culture
- Analytical Chemistry
- Aquaculture Genetics
- Environmental Pollution Control and Technology
- Green Building Technology and Design
- Supply Chain Management
- Sustainable Production and Products

Industry Orientation Programme Modules

Option 1: One-Semester Industry Immersion Programme

- Project

And select one module from the list below:

- Corporate Innovation Immersion Programme
- Entrepreneurial Immersion Programme
- Industry Immersion Programme

Option 2: Two-Semester Industry Immersion Programme

- Industry Immersion Programme
- Industry Immersion Programme II

Career Opportunities

You can look forward to enriching careers in environmental, water services, petrochemical and semiconductor sectors, fisheries, oceanariums, wildlife and marine parks and reserves, research institutes as well as government agencies. Get ready to take on roles such as:

- Aquarist
- Aquaculture Technologist
- Conservation and Outreach Executive
- Environmental Control and Environmental Service Officer
- Environmental Health and Safety Technician
- Laboratory Technologist
- Operations Technician/Executive
- Parks Officer
- Sustainability Executive/Officer

"This diploma offers modules that broaden my knowledge and perspectives on the many pillars of Environmental Science. Experiential learning through field trips, laboratory work, exciting internships, and overseas study trips has allowed me to apply and refine what I have learned. The supportive lecturers have also played a crucial role in elevating my passion for biodiversity conservation to new heights!"

CHOO RUIRONG, 2024 Graduate

Diploma in
Pharmaceutical Science R22

Find your purpose, create life-changing medications and improve countless lives.

Scan to learn more

Looking to embark on a career which can create positive health outcomes and possibly save lives? You could be that hero! Learn how to develop new drugs and therapies, pick up critical pharmaceutical knowledge and hone your people skills. Make an impact in the healthcare or pharmaceutical industry!

- **Industry-Aligned Curriculum:** Tailored to match current industry standards, this programme prepares you for dynamic careers in pharmaceuticals, healthcare and research
- **Authentic Hands-On Learning:** Gain real-world experience by mastering drug formulation, production and analysis through practical, hands-on training in state-of-the-art facilities
- **Clinical Skills Mastery:** Develop crucial pharmacy practice skills, including medication dispensing, patient counselling and effective patient care, ensuring you are ready for impactful roles in healthcare settings

What you will learn

General Modules
- Critical Thinking and Problem Solving Skills
- Designing Your Impact
- Designing Your Life (Future-Ready I)
- Designing Your Life (Future-Ready II)
- Designing Your Life (Personal Growth I)
- Designing Your Life (Personal Growth II)
- Effective Workplace Communication
- Innovation and Practice
- Singapore, the World and I

Discipline Modules
- Anatomy and Physiology
- Data Analytics
- General and Physical Chemistry
- Good Dispensing Practice
- Healthcare Regulations and Ethics
- Laboratory Practices and Safety
- Mathematics for Applied Science
- Microbiology
- Molecular Cell Biology and Biochemistry
- Organic and Inorganic Chemistry
- Principles of Chemical and Biological Drug Action
- Sustainability and Climate Change

Major Modules
Major in Patient Care Practice
- Advanced Pharmacotherapy
- Clinical Pharmacology and Pharmacotherapy
- Digital Health Innovations and Applications
- Healthcare Professionalism and Patient Counselling Skills
- Health Products Supply Chain
- Integrative Medicine and Nutrition
- Medication Safety and Sustainability
- Minor Ailments and Preventive Health
- Pharmaceutics and Compounding Techniques

Major in Pharmaceutical Industry Practice
- Analytical Chemistry
- Clinical Development to Commercial Success
- Clinical Pharmacology and Pharmacotherapy
- Current Good Manufacturing Practice
- Drug Design and Medicinal Chemistry
- Health Products Supply Chain
- Minor Ailments and Preventive Health
- Pharmaceuticals and Biologics Manufacturing Science
- Pharmaceutics and Compounding Techniques

Elective Modules
Customise your learning pathways by selecting **ONE** of the following options:

Option A: Select Elective modules totalling 12 Modular Credits (MCs) from the list of modules in applicable Minor programmes and/or from the List of Electives below

Option B: Select a Minor Programme

Option C: Select a CET-based Certificate programme and/or Elective module(s) from the list of modules in applicable Minor programmes or from the List of Electives below (only for eligible students)

List of Electives for Major in Patient Care Practice:
- Analytical Chemistry
- Clinical Development to Commercial Success
- Current Good Manufacturing Practice
- Drug Design and Medicinal Chemistry
- Genetics
- Immunology
- Pharmaceuticals and Biologics Manufacturing Science

List of Electives for Major in Pharmaceutical Industry Practice:
- Advanced Pharmacotherapy
- Digital Health Innovations and Applications
- Genetics
- Healthcare Professionalism and Patient Counselling Skills
- Immunology
- Integrative Medicine and Nutrition
- Medication Safety and Sustainability

Industry Orientation Programme Modules
Option 1: One-Semester Industry Immersion Programme
- Project

And select one module from the list below:
- Corporate Innovation Immersion Programme
- Entrepreneurial Immersion Programme
- Industry Immersion Programme

Option 2: Two-Semester Industry Immersion Programme
- Industry Immersion Programme
- Industry Immersion Programme II

Career Opportunities

Through rigorous training in biomedical science, chemistry, pharmacology, pharmaceutics, and clinical pharmacy, you will be prepared to excel in both industry-focused roles and patient care settings.

- Assistant Biotechnologist
- Assistant Formulation Scientist
- Clinical Research Coordinator
- Healthcare Product Specialist
- Laboratory Technologist
- Pharmaceutical Research Technologist
- Pharmaceutical Sales Executive
- Pharmacy Retail Executive
- Pharmacy Technician
- Procurement Executive (Healthcare)
- Quality Assurance Assistant/Executive
- Quality Control Analyst
- Regulatory Affairs Executive

"RP provided a strong foundation in pharmaceutical science, honing my critical thinking, and problem-solving skills. The supportive environment and dedicated lecturers prepared me well for my current studies in Pharmacy at the National University of Singapore. I'm grateful for the invaluable experiences and guidance from RP."

BENNY LIM HONG KIAT, 2021 Graduate