

## Program Highlights

Chemistry-Engineering is an interdisciplinary branch of technoscience combining materials and natural sciences such as chemistry and life sciences (e.g., biology, microbiology and biochemistry) along with physics and mathematics. Understanding basic chemistry and its scientific applications with a focus on materials and biotechnology is a dominant principle of the curriculum at the Chemistry Program, School of Engineering.

Our Chemistry program will teach you core components of introductory chemistry such as physical, organic, inorganic, analytical chemistry and biochemistry. From the foundation, you will explore a broader range of topics such as bio-organic, bio-inorganic, organometallic, solid state, quantum, material, and polymer chemistry.

You will build a solid base of scientific knowledge and cultivate new thinking skills based on chemistry. Join us and transform your passion for chemistry into a rewarding future!

### Does This Program Suit You?

- Interested in modern applications of chemistry and biotechnology.
- Have solid foundation in chemistry, mathematics and physics, who are prepared for college education and self-disciplined to pursue academic goals.
- Willing to confront the grand challenges of the world and have passion to make the world a better place using their expertise in chemistry and biotechnology.

This may be the program for you!

NAGOYA UNIVERSITY

## GLOBAL30 INTERNATIONAL PROGRAMS

We are one of the few universities in Japan offering a wide array of programs fully taught in English for the full 4 years of undergraduate education. 10 programs in total are offered under the umbrella of the G30 International Programs, ranging from various STEM programs to Social Sciences and Humanities. We welcome students with a passion for innovation and research!

**Point1** Taught in English  
(No Japanese knowledge required)

**Point2** Intensive Japanese language course

**Point3** Research-focused university

**Point4** Diverse world-class faculty  
and students

**Point5** Good career prospects

**Point6** 帰国子女OK

▶ Find out more about the programs:

<https://admissions.g30.nagoya-u.ac.jp/> ▶▶



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**G30** NAGOYA UNIVERSITY  
GLOBAL 30  
INTERNATIONAL PROGRAMS

NAGOYA UNIVERSITY

| JAPAN



# Chemistry Program

School of Engineering



Degree Awarded:

Bachelor of Engineering  
Concentration in Chemistry

Duration : 4 years

Start Early October

## Our Strengths and Unique Points

Our mission of the Chemistry Program, School of Engineering is to understand the mysteries of nature at the atomic and molecular levels and transform our expertise to develop techniques for the advancement of chemistry and biotechnology. The curriculum is meticulously designed to give students a profound understanding of chemistry, biochemistry, materials chemistry, and their scientific applications. From the third year onwards, you will study advanced applications and develop research skills through interactive seminars, workshops, and laboratory work. These hands-on experiences the program offers will help you prepare for a successful career in the ever-evolving field of chemistry. The Chemistry program always encourages students to challenge themselves and go beyond the traditional principles of materials chemistry, biochemistry and bioengineering. The program fosters innovation and applications of new disciplines to unexplored fields beyond the realms of chemistry.

**Jiyoung Shin**  
Professor of Chemistry

## Your Future Career

The research environment, rich with opportunities linked to industry and top-notch facilities, empowers students to become specialists in chemistry engineering taking leading roles in industry, government, and academia. Most of our graduates have gone on to the graduate program at Nagoya University. Some also have gone on to graduate schools at prestigious universities around the world. Previous graduates have gone into careers in the chemical, pharmaceutical and food manufacturing industry, public institutions or taken positions in academia in or outside Japan.

## Curriculum

|          |   |
|----------|---|
| 1st year | Japanese Language, Liberal Arts & Basic Courses   |
|          | Take foundational courses to ease into life at Nagoya University: <ul style="list-style-type: none"> <li>• Fundamentals of Physics I/II/III</li> <li>• Fundamentals of Biology I/II</li> <li>• Fundamentals of Chemistry I/II + Laboratory</li> <li>• Fundamental Courses in Natural Sciences</li> </ul>  |
| 2nd year | Basic Specialized Courses   |
|          | Start building your chemistry foundation by taking basic courses: <ul style="list-style-type: none"> <li>• Analytical Chemistry</li> <li>• Physical Chemistry I/II</li> <li>• Organic Chemistry I/II</li> <li>• Inorganic Chemistry I</li> <li>• Cell Biology I</li> <li>• Quantum Chemistry I</li> </ul>   |
| 3rd year | Specialized Courses & Laboratories  |
|          | Start deciding on your specialization through specialized elective courses: <ul style="list-style-type: none"> <li>• Inorganic Chemistry II</li> <li>• Quantum Chemistry II</li> <li>• Chemistry of Inorganic Materials I</li> <li>• <b>Specialized Elective Courses</b></li> <li>• <b>Chemistry and Biotechnology Laboratory I/II</b></li> </ul> |
| 4th year | Research and Thesis   |
|          | Complete your research on your chosen specialization/field: <ul style="list-style-type: none"> <li>• Chemistry and Biotechnology Laboratory III/IV</li> <li>• Graduation Research A/B</li> <li>• Advanced Chemistry Tutorial A/B</li> </ul>   |

\* Note: This curriculum outline serves to show a snapshot of what the program has to offer and does not list all graduation requirements. Please refer to the program's Graduation Requirements found on the admissions website.



## Timetable

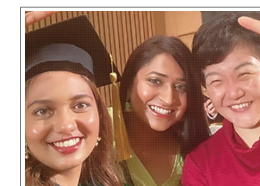
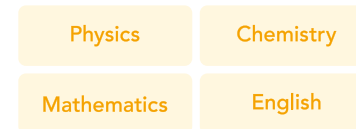
### 3rd Year Spring Timetable Sample

|   | MON   | TUE                              | WED                    | THU                     | FRI                         |
|---|---|----------------------------------|------------------------|-------------------------|-----------------------------|
| 1 | Quantum Chemistry II  | Organic Chemistry III            | Chemical Physics       | Computational Chemistry | Earth and Planetary Science |
| 2 | Inorganic Chemistry II  | Chemistry of Inorganic Materials |                        | Polymer Chemistry       | Organic Chemistry V         |
| 3 | Chemistry/Biotechnology tutorial  | View of Advanced Engineering     | Outline of Engineering |                         |                             |
| 4 | As I join a research lab, I return to the lab between classes until 17:00 |                                  |                        |                         |                             |
| 5 |   |                                  |                        |                         |                             |



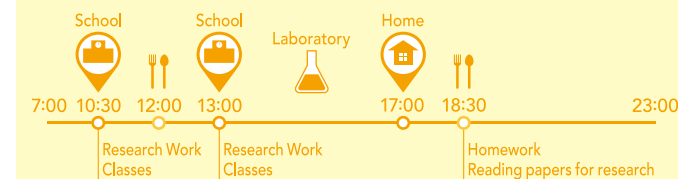
## What courses did you take in high school?

In high school, I took:



### 🕒 1 DAY SCHEDULE

⋮ What does a day look like in your 4th year?



## What sparked your interest in the G30 Chemistry Engineering Program?

I first considered applying to a university in Japan when I had the opportunity to visit Japan during my time in high school through the Sakura Science Exchange Program for a week. In that week, I was fortunate enough to attend a speech given by Ryōji Noyori, Emeritus Professor of Chemistry and Nobel Laureate at Nagoya University. I applied to Nagoya University to gain the necessary skills to also contribute to such cutting-edge research in the future, and as such, joined the Ohtsuki research laboratory as soon as I was able to.