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*"ESBS students are educated to deal with multicultural experiences. As a HR responsible, I can say: ESBS students are trained to be problem solvers and solutions finders."*

Christian Döhring, Head training and development at Synthes GmbH, Switzerland

*"I am very proud of the ESBS because it is a sort of material achievement - research is often non material. It provides to its students the chance to use their brains to improve life for mankind."*

Pr. Pierre Chambon, Co-founder of ESBS



# master in synthetic biology

crea/compo www.oligraphiste.fr

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### Exceptional environment for studies

Multicultural environment in the upper Rhin Valley a tri-national region

- High performance in Biotechnology
- High performance in research and innovation
- Industries : Evolva, Roche, Merck Millipore, Sanofi, Transgène, Novartis, Lilly

### High quality of studies

Scientific and cultural diversity :

- Combined with internationally recognized research centers and public laboratories of the partner universities :  
IREBS, IGBMC - Strasbourg, BIOSS - Freiburg, D-BSSER - Basel, ITG - Karlsruhe
- Practicals, internships and cases studies

### Partnership with 4 Universities

- **Strasbourg - Freiburg - Basel - Karlsruhe**  
Molecular biology, cell biology, biochemical engineering, biophysics, bioinformatics
- **Freiburg**  
Plant molecular biology
- **Basel**  
Microbiology

### 3 teaching languages

English, French, and German

### Career opportunities

Synthetic biology is a powerful innovation asset for R&D departments of biotechnology companies. It offers original solutions in many sectors : medical, veterinary and plant health (phytosanitary, detailed control and expression of molecules of therapeutic interest), ecology (biosensors, anti-pollution treatment of ecosystems).

The cross-border and the multicultural environment of our education gives our students a strong advantage in the pursuit of their professional career within the current international socio-economic structure.

The ESBS trains highly competent and polyvalent researchers at the forefront of technology : research in industry, academic researcher, project or product manager, engineer.



### Calendar and curriculum 2 years

#### Year 1

Biotechnology basics - Introduction to technologies sectors

##### Semester 1

2 weeks of synthetic microbiology at the Basel Biozentrum (Sept.)  
Courses and Practical work at the ESBS (mid September to February)

##### Semester 2

6 weeks of study at Freiburg University (mid-February to March)  
Project in synthetic biology (June in Freiburg, Basel or Strasbourg)

#### Year 2

Advanced biotechnology topics with a focus on synthetic biology

##### Semester 3

Courses (September to mid-November, Strasbourg)  
Project in synthetic biology (June, in Freiburg, Strasbourg or Basel)

##### Semester 4

6 up to 8 months of final internship - end of studies (from mid-January)

#### Courses

- Courses are organized by UE (teaching units) that give ECTS credits
- 60 ECTS credits are required per year
- Courses and conferences are in German, English, French
- Both theory courses and practice (group work, case studies)
- Internship mandatory in companies in France and oversea
- Exchange studies (practice and projects) between partner universities

### Selection and admission process :

- **Bachelor degree or equivalent**
- **Knowledge requirement:** cellular and molecular biology, molecular genetics, biochemistry, biophysics, mathematics for life sciences
- **Language requirement:** english, french and german

### Admission and registration:

Based on a written application + an oral presentation (personal interview)

#### Criteria of selection :

- Quality of academic background
- Career project and interest and motivation of the student for synthetic biology
- Motivation for an international curriculum
- Sufficient proficiency in English, German and French are also important

#### STEP 1

Pre registration process :  
beginning of March  
Registration online  
[www.esbs-unistra.fr](http://www.esbs-unistra.fr)

#### STEP 2

Last day for all required  
documents : end of May  
Documents must be received at Sclarité  
(see the address on the back)

#### STEP 3

Interview and admission  
decision : July

#### FINAL STEP

Classes begin : September

#### More information :

<http://interreg-synthetic-biology.unistra.fr/>