

## **Art of Gene Cloning - Preliminary program**

### **Day 1—Intro (Full day), Monday 19 Oct 2026 Room A502**

- Course participants introduction, discuss the problem encountered during molecular cloning and what is expected to learn in this course **10:00-12:00**
- Introduction of software (Snapgene, APE etc.) used in molecular cloning, and gene cloning methods; **14:00-16:00**

### **Day 2 –Molecular cloning practice (Half Day), Tuesday 20 Oct 2026 Room A402**

- Practice in designing a cloning project (design their own primers and synthesize from Eurofins) **10:00-12:00**

### **Day 3 –Molecular cloning practice (Full Day), Monday 2 Nov 2026 Room A502 and Lab C311**

- Introduction lecture of Molecular Cloning with Q&A **10:00-12:00**
- Cloning a gene of interest with different methods (digest-ligation, Gibson Assemble, or Golden Gate; each group with one method) **14:00-16:00**

### **Day 4 – Molecular cloning practice (Full Day), Wednesday 4 Nov 2026 Lab C311**

- Gel purification and DNA fragment ligation **10:00-12:00**
- Transformation into *E. coli* **14:00-16:00**

### **Day 5 – Molecular cloning practice (Full Day), Thursday 5 Nov 2026 Lab C311**

- Colony PCR check by gel electrophoresis **10:00-12:00**
- Pick up the positive ones for plasmid isolation **14:00-16:00**

### **Day 6 – Molecular cloning practice (Full Day), Friday 6 Nov 2026 Lab C311**

- Plasmid isolation and gel check after restriction enzyme digestion and send the positive ones for sequencing **10:00-16:00 (Lunch break included)**

### **Day 7– Invited lecture (Half Day), Monday 9 Nov 2026 room A402**

- Dr. **Sylvestre Marillonnet** (group leader of Synthetic Biology, Leibniz Institute of Plant Biochemistry), Lecture about modular cloning (**14:00-16:00**)

### **Day 8 – Molecular cloning lectures (Half Day), Wednesday 11 Nov 2026 Room A372**

- Dr. Giorgios Tzelepis (associate professor, Mykopat), - Molecular cloning in fungi **10:00-11:00**
- Dr. Shamik Mazumdar (Postdoc, Molecular Sciences) - Molecular cloning in Higher plants **11:15-12:15**

### **Day 9 - Invited lecture (Half Day), Thursday 12 Nov 2026 Room A402**

- Prof. **Luke Mackinder** (CNAP Chair in Algal Cell and Molecular Biology, Department of Biology, University of York), Lecture about Cloning technologies (**14:00-16:00**)

### **Day 10 - Group discussions (Half Day), Friday 13 Nov 2026 Room A402**

- Analysis of sequencing results and checking the correctness of the sequence **10:00-11:00**
- Discussion in group what they have learned and summarize for each project **11:00-12:00**