

# Essential Manufacturing Skills Single-Use Technology: Aseptic Connectors, Tubing sets & Bio-welders

Skills and Training Laboratories Training Course  
Sycamore House  
Cell and Gene Therapy Catapult

# Essential Manufacturing Skills

## Single Use Technology: Aseptic Connectors, Tubing sets & Bio-welders

This two-day course introduces single-use technology (SUT) in bioprocessing, covering essential concepts, principles, and practical applications. Through lectures, hands-on sessions, case studies, and discussions, participants gain a comprehensive understanding of SUT and bio-welding in bioprocessing.

### Learning objectives:

- Describe the terms, concepts and benefits of SUT in bioprocessing.
- Identify the risks of open, closed and scale up strategies for bioprocessing systems.
- Understand the principles advantages and disadvantages, the areas and applications of SUT in cell and gene therapy processes.
- Identify design requirements in single-use fluid paths in bioprocessing.
- Understand how the process setting influences the type of connection and apply SMART criteria to the choice of tubing and tubing sets.
- Identify the theory and generic principles of bio-welding and show competence on different makes of bio-welders.
- Review what to consider when choosing between bio-welders and connectors as a connection technology.



# Essential Manufacturing Skills

## Single Use Technology: Aseptic Connectors, Tubing sets & Bio-welders

Course title	Essential Manufacturing Skills: Single Use Technology: Aseptic Connectors, Tubing sets & Bio-welders
Course level	Introductory
Course fee (per delegate)	£650 plus VAT
Course date	Available on request
Venue	CGT Catapult Skills and Training Laboratories, Sycamore House, Stevenage

### Who should attend

Ideal for newcomers to biotherapeutics, ATMPs, or pharmaceuticals, and professionals seeking deeper knowledge of SUT compliance, quality, and safety. Suitable for staff in manufacturing, operations, biotechnology research, engineering, QA, and regulatory roles

### Pre-course expectations and recommendations:

- Delegates will benefit if they have a basic understanding of bioprocessing, for delegates without this understanding we recommend attendance on the [Introduction to Biomanufacturing and Advanced Therapies](#) course and other [Essential Laboratory Skills](#) courses.
- Participants would benefit from basic familiarity with bioprocessing workflows (such as batch-manufacturing records and standard operating procedures).
- If you are unsure if this course is suitable for you, please contact our Skills team via [skillstraininglabs@ct.catapult.org.uk](mailto:skillstraininglabs@ct.catapult.org.uk) and we will be happy to advise.
- Before starting this course, participants will be required to complete and sign the course-specific registration form.

### Assessment

There is no formal assessment for this course. You will be asked to complete a feedback form after the course

# Agenda

Day 1 - Time	
9.30 - 10.00	Principles and Applications of SUT in Bioprocessing - Terms, concepts and benefits of SUT
10.00 - 11.15	SUT Components (Bioreactors, Fluid Flow, Filters, Tubing Connectors) Basic Principles of open and closed systems
11.15 - 11.30	<b>Break</b>
11.30 - 13.00	Process requirements - Importance of planning tubing sets for a process from start to finish including process setting influences on connector type.  Bioprocessing Applications:  Bioprocessing Scale up Strategies and the role of SUT and Aseptic Connectors
13.00 - 13.45	<b>Lunch</b>
13.45 - 15.15	Review of Open Connectors, Aseptic Connectors and Disconnectors. Validation of sterility and compatibility of Connectors Tubing used in SUT & Fluid Dynamics - Selecting the correct tubing: STAMP Method to test tubing efficiency
15.30 - 15.45	<b>Break</b>
15.30 - 17.30	LAB BASED PRACTICAL 1: Tubing Compatibility Exercise

Day 2 - Time	
9.30 - 10.00	Regulatory, Validation, QC and QA requirements for SUT in bioprocessing Choosing between Tube Welders and/or connectors in a fluid path
10.00 - 11.15	Introduction to Bio-welders
11.15 - 11.30	<b>Break</b>
11.30 - 12.30	Theory of Tube Welders and different types available. Formulation influences on tubing choices  SUT - Integrity Testing for Filters and SUT
12.30 - 13.00	STL Showcase of Tube welders and Sealers
13.00 - 13.45	<b>Lunch</b>
13.45- 17.00	LAB BASED PRACTICAL 2: Tube Welding Exercise
17.00 - 17.30	Course Review and Evaluation

Final agenda subject to change.

**Address:**

Sycamore House  
Leyden Road  
Stevenage  
SG1 2BP

**How to find us**

**Driving** - to park in our carpark use the vehicle security gate on Leyden Road

What3words ///slip.cakes.owners

**By taxi or on foot** - use the pedestrian security gate on Gunnells Wood Road

What3words ///parent.risk.lines

**Once on site proceed to the main reception located on the south-west side of the building**

**No smoking**

Please be aware that Stevenage Science Park is a no smoking site.

**Contact us**

We want you to enjoy this training course, but if you have any concerns, please do not hesitate to contact us at [skillstraininglabs@ct.catapult.org.uk](mailto:skillstraininglabs@ct.catapult.org.uk).

Sycamore House is located just outside Stevenage town centre.

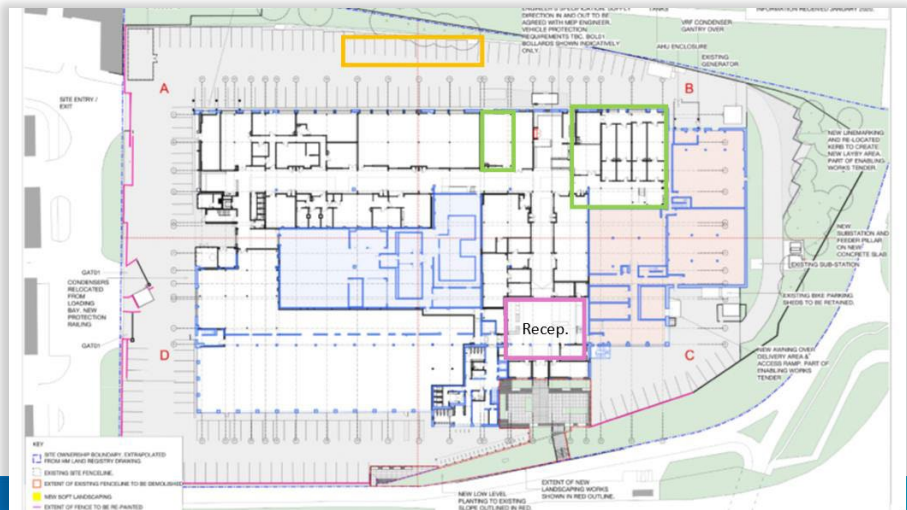
Sycamore House is close to the A1(M) via junction 7, the connectivity of the campus by car is considered good. Stevenage is well connected to major hubs. Cambridge is only 40 kilometres away and reachable within 40 minutes by train, and it takes only a 21-minute train journey to reach King's Cross in London. In addition, Luton and Stansted international airports are reachable within 40 minutes and Heathrow within 1 hour.

**Parking**

There are designated car parking spaces available to CGT Catapult staff and visitors to Sycamore House including one electric charging parking space. Car parking is available on a first-come, first-served basis. Our parking spots are marked with the Catapult logo/sign. There are additional parking spots for visitors that is shared among the other tenants in the building. These spots can be booked via building reception in advance.

Additional parking at Stevenage Football Club is available for nine cars for Catapult employees and visitors - see map below.

# Directions



Area marked in orange is car parking allocated to CGT Catapult employees on a first-come, first-served basis.

The building entrance / reception is marked with purple, and the CGTC ground floor areas, including our Skills and Training Laboratories are marked in Green.

## Walking and cycling

Although the walk from the town centre and station takes approximately 25 minutes, there are continuous footpaths and cycleways, and safe crossings all the way to our entrance.

There are 33 cycle spaces for general use. There is a bike store located at the front of the building entrance accessed via Gunnells Wood Road. The spaces for the bikes are available on a first-come, first-served basis.



## Car Parking at Stevenage Football Ground

Map showing the additional parking available at the East and West areas of Stevenage football ground.

