

Flat Rate Guidelines

What it is

For most academic submissions, Surface Science Western (SSW) Research Scientists analyze student samples on their behalf, with work billed at SSW's standard academic rate. However, if a student and their Principal Investigator (PI) want the student to gain hands-on experience and anticipate frequent use of SSW facilities over several terms, a flat rate fee structure can be discussed with SSW. This option is designed to give students practical experience operating instruments and collecting data independently, helping them develop as capable researchers while providing a cost-effective alternative to hourly billing.

What flat rate offers

The flat rate training option at SSW is designed to support student development while offering predictable and cost-effective access to instrumentation and expertise. Here's what it includes:

- **Independent Access to Instrumentation**
Students are granted access to select SSW instruments for independent use, allowing them to gain practical experience relevant to their research.
- **Hands-On Training**
SSW staff provide initial and ongoing training on instrumentation, ensuring students can operate equipment safely and effectively.
- **Skill Development**
The flat rate model encourages students to become proficient with advanced instrumentation and analytical techniques, preparing them for future academic or industry roles.
- **Expert Support**
Research scientists are available to advise students during their analyses, and troubleshoot issues, helping to foster deeper understanding and skill development.
- **Thesis and Project Support**
Data collected under the flat rate agreement can be used for academic theses, course projects, and publications.
- **No Hourly Charges**
After the initial training period (where fees apply), all eligible instrument usage and staff support under the flat rate agreement are covered without additional hourly billing, simplifying budgeting for supervisors.
- **Flexible Scheduling**
Students can book instrument time based on availability, allowing them to integrate their SSW work into their individual timelines and availabilities more easily.

Qualification for Flat Rate

The flat rate structure is designed as a means to empower students through expert training and hands-on experience with advanced instrumentation and data analysis. The goal is to help students become confident and capable researchers. Cost-saving is another advantage.

- **Selective Approval**

While we strive to accommodate as many projects as possible, acceptance into the flat rate program is **not guaranteed**. Each application is evaluated based on its feasibility and alignment with SSW's academic and operational goals.

- o Flat rate approval depends on factors such as:
 - The number of samples to be analyzed
 - The complexity and type of methodologies requested
 - The anticipated frequency of instrument use
 - Financial viability for SSW

- **Application Process**

Before the flat rate structure can begin, the student and their Principal Investigator (PI) must consult with SSW's Academic Lead to discuss the project's scope and requirements.

The following information will be gathered during this discussion:

- o A brief outline of the research project
- o Requested analytical techniques and instrumentation
- o Estimated number of samples
- o Expected time frame and level of commitment
- o Identification of who the flat rate will cover (e.g., individual student name and information)

- **Scope of Flat Rate Coverage**

The flat rate agreement must be clearly defined prior to commencement for a defined time period (e.g., semester or academic year).

- o The flat rate may be extended beyond that defined time period, please see the SSW Academic Lead.

Flat Rate Caveats

While the flat rate structure offers significant benefits, there are important limitations and conditions to be aware of:

- **Training Costs Are Separate**

Instrumental training is **not included** in the flat rate pricing.

- o Training fees are fixed according to SSW's Instrument Training Modules (ITMs) and vary based on the complexity of the technique.
- o In some cases, it may be more efficient for SSW staff to perform the analysis rather than train the student. In such cases, this will be discussed with the PI and standard hourly billing rates will apply to this work.
- **Access Limited to Approved Instruments**
Students may only use instruments for which they have been trained and formally approved.
 - o Under no circumstances may students operate equipment they are not authorized to use.
- **Specific Usage Conditions**
Flat rate usage is restricted to the samples and projects discussed with the SSW Academic Lead before the agreement.
 - o Only the individual student's project samples are covered by the flat rate.
 - o Students may not run samples for other students, groups, or external organizations unless prior arrangements have been made.
 - o Collaborative work with external institutions must be declared and approved in advance, with appropriate financial compensation also arranged in advance.
 - o If additional projects are to be added, this must be discussed with the SSW Academic Lead.
- **Shared Instrument Use within Groups**
In larger research groups, a trained and approved student may operate an instrument on behalf of another student only if:
 - o Both students are covered under the flat rate agreement.
 - o This arrangement is discussed and approved by the instrument owner and the SSW Academic Lead.
- **Proficiency Expectations**
Students are expected to maintain a high level of proficiency on the instruments they've been trained to use.
 - o Instrument use should be frequent enough to avoid the need for repeated refresher training or repeated use interventions.
 - o If an SSW staff member determines that a student's proficiency has declined, a proficiency retest may be required, and additional charges will apply.
- **Compliance with Lab Rules**
All individuals covered under the flat rate must understand and adhere to SSW's **Laboratory Use and Health & Safety Guidelines**.
- **Data Interpretation is Not Included**
The flat rate covers instrument access and usage, not data interpretation or processing by SSW staff.

Interpretation of analytical results is the responsibility of the student and their PI.

- o In some cases, training time incurred by staff scientists for data processing and interpretation (beyond the basics included in initial training) may require additional charges.
- o SSW staff may assist with interpretation, but this will incur additional charges at standard hourly billing rates, or through a collaboration between the scientist and the student/PI.

Please also refer to the section on **Collaboration and Acknowledgements** for accessing additional expertise on projects (this is highly encouraged).

Pricing Structure and Fees

The flat rate pricing structure is designed to offer predictable costs for instrument access.

Note: Instrument training fees are IN ADDITION to the flat rate fees posted below, this includes the Standard, Affiliate Member, and Bulk Group

Below are the details:

- **Standard**
 - o \$1500 per academic term per student
 - o This covers access to approved instrumentation and expert support, but does not include training fees.
- **Affiliate Member**
 - o Students from SSW Affiliate Member groups are eligible for discounted rates:
 - \$1250 per term for the first five students
 - \$1000 per term for each additional student beyond the first five
 - Training fees are extra
 - o 4th year honour thesis students from the Affiliate Member group are eligible for discounted flat rates:
 - \$1000 for the duration of their 4th year project (Sept-March)
 - It is expected that the 4th year student will be working closely with a highly trained senior graduate student from the Affiliate lab
 - Some instruments are not available for independent use by the 4th year student due to the complexity and/or cost of the instrument
 - In this case the senior graduate student or SSW Staff member will run the instrument for the 4th year student
 - o To qualify for the discounted Affiliate Member rate, Affiliate Members are expected to run all industrial contracts and NSERC Alliance Grants through SSW (via the ROLA process).

- o For more information on Affiliate Membership, please contact SSW's Director
- **Bulk Group**

Bulk pricing may be available for groups that wish to have designated individuals run analyses for the entire group.

 - o **Rate:** Negotiated yearly charge that is determined based on group size and usage expectations.
 - o **Eligibility:** Must be discussed and approved by SSW's Director and the Academic Lead.
- **Training Fees**

Instrumental training on key instruments will be charged separately and in addition to the flat rate fees and are based on SSW's Instrument Training Modules (ITMs), or SSW's standard hourly billing rate.

 - o Each ITM has a fixed cost depending on the instrument and complexity, and this provides a certain set amount of training time for that specific instrument.
 - **NOTE: AS OF NOVEMBER 2025 THE ITM PRICING IS STILL TBD**
 - o Training is typically a one-time cost per instrument, and students do not need to repeat training in subsequent terms, unless proficiency declines.
 - o Some instruments do not have an associated ITM, and in these cases, training can be provided at SSW's standard hourly billing rates.
- **Prorated Billing**
 - o Students who join the flat rate program mid-term may be eligible for prorated fees, depending on the timing and expected usage.
 - It is NOT guaranteed that fees can be pro-rated.
 - o This must be discussed with the Academic Lead and/or SSW Director during signup.
- **Low Usage Clause**
 - o Flat rate fees are non-refundable, even if a student does not use the instrumentation enough to justify the cost.
 - o It is the responsibility of the student and PI to book sufficient instrument time to maximize the value of the flat rate.
 - o If a student is unable to use the facilities due to extenuating circumstances (eg. Illness, leave of absence), please discuss this with SSW's Academic Lead as soon as possible
 - In such cases, it may make sense to switch to standard hourly billing, or adjusting participation for future terms.
- **Additional Charges**
 - o If SSW staff are required to run analyses for the student, or if the work falls outside the flat rate scope, standard academic hourly rates will apply. – Please see section called **Excluded Instruments**

- This will be communicated prior to billing.
- o Consumables beyond standard usage are billed separately. – Please see section called **Charges for Consumables**
 - To be discussed prior to flat rate commencement
- **Billing Process**
 - o Flat rate charges and any training fees are billed retroactively at the end of each academic term to the speedcode provided during the initial signup meeting.
 - o Any consumables used during the term will be billed separately to the same speedcode. See the section **Charges for Consumables** for details.
- **Annual Review**

Flat rate pricing is reviewed annually and may be adjusted based on operational costs and usage trends. Any changes to the pricing structure will be communicated in advance.

Fees - Excluded Instruments

While the flat rate structure provides broad access to SSW instrumentation, certain instruments are excluded due to their high operational and maintenance costs. Use of these instruments will be billed at the standard hourly billing rate, even if the student is enrolled in the flat rate program.

Excluded Instruments

The following instruments are not covered under the flat rate:

- **Cameca IMS-3F** – Dynamic Secondary Ion Mass Spectrometer
- **Zeiss Xradia 410** – Micro-CT Scanner
- **Q-Fog, Q-Sun, and Q-UV** – Weathering Chambers

Billing

- Usage of excluded instruments will be tracked in SSW's internal database.
- Charges will be applied retroactively at the end of the semester, billed to the speedcode provided during the initial signup.

Fees - Charges for Consumables

While the flat rate covers instrument access and staff support, consumables beyond standard usage are billed separately. These charges reflect materials that are either high-cost, used in bulk, or require replenishment due to user error.

Consumables That may Incur Additional Charges

- **Polishing Supplies**
 - o Users/groups are expected to purchase and store their own polishing supplies at SSW.

- **Gases**
 - o Includes gases such as argon (Ar) for ICP-MS, extended glove box usage for XPS, and DSC and TGA.
 - o Users/groups are responsible for these costs.
- **Bulk Chemical Usage**
 - o Excessive use of chemicals beyond standard lab practice.
- **FTIR** – Germanium micro-ATR crystals
- **DSC Pans**
 - o Disposable pans used in Differential Scanning Calorimetry.
- **Weathering Chamber Supplies**
 - o Includes specialized consumables required for Q-Fog, Q-Sun, and Q-UV chambers.
- **Negligence-Related Costs**
 - o Charges may apply for consumables wasted due to user error (e.g., leaving Ar cylinder open after Ir coating is completed).

Billing

- All consumable charges will be tracked and billed at the end of the semester, in addition to the flat rate fee.
- Charges will be applied to the speedcode provided during the initial signup meeting.

Instrument Training Modules (ITMs)

SSW's Instrument Training Modules (ITMs) are designed to provide students and Principal Investigators (PIs) with a structured, consistent, and affordable approach to training on key instrumentation.

Overview

- ITMs focus on student development, ensuring that trainees gain the skills and confidence needed to operate instrumentation independently and safely.
- Modules are available for a range of key instruments at SSW. Please see the SSW Academic Lead for a list of instruments which have a flat rate training module (ITM). Other instruments, that are not on this list, are available for training as well, but at the standard hourly billing rates.

Modular Design

- ITMs are customizable: students only train on the components and key instrumentation that is relevant to their research needs.
- This modular approach avoids unnecessary training and optimizes time and resources.

- Some instruments require foundational ITMs before progressing onto another, but related, instrument ITM.
 - o Such as completion of the SEM ITM before progressing to the FESEM ITM. This ensures that students have all of the knowledge required before progressing to the more complex instrumentation.

Training Structure

- **Each module includes:**
 - o A safety check, and a check on theoretical background – See the section: Pre-training knowledge requirements
 - o Hands-on instruction
 - o One-on-one training with an SSW Staff member
 - o Training tailored to the student and their project
- **A final hands-on exit assessment is required to complete the module.**
 - o Students must pass this assessment to be approved for independent instrument use.
 - o The student will be given a task to complete on the instrument, and the student must independently complete this task within the chosen time limit. The SSW Staff member that is in charge of the instrument will evaluate the student's performance, and give the student and the PI a formal assessment and feedback.
 - o This ensures both SSW and the PI can trust that the student is collecting high-quality data safely and competently.

Pricing and Duration

- Each ITM has a fixed price and a defined number of training hours, based on the complexity of the instrument.
 - o **NOTE: AS OF NOVEMBER 2025 THE ITM PRICING IS STILL TBD**
 - o Example: Training on the Hitachi SU3500 requires 6 hours @ \$170/hour = \$1020.00
- Training is typically a one-time cost per instrument and/or method.
 - o If a student continues on the flat rate in future terms, they do not need to repeat training, unless proficiency has declined significantly.

Proficiency and Retesting

- If a student fails to demonstrate sufficient proficiency, and/or fails the final hands-on exit assessment, despite extensive training, or becomes inactive and requires retraining, then the student will need to undertake retraining on that instrument, standard hourly billing rates will apply if this occurs.

- SSW staff may request a retest if they believe a student's skills have lapsed, standard hourly billing rates will apply if this occurs.

Expectations during training

To ensure students gain the most from their ITMs, the following expectations must be met during their one-on-one training time with SSW Staff:

Note-Taking and Documentation

- Students are expected to take detailed notes during training sessions using pen and paper or a laptop.
- Cellphone video or audio recording is strictly prohibited.
- Notes should clearly document instrument operation procedures, as students will be tested on their ability to operate the instrument independently.

Pre-Training Knowledge Requirements

- Before beginning an ITM, students must demonstrate a basic understanding of:
 - o The instrument's purpose and operation
 - o The analytical method involved
 - o The type of data the instrument provides
- A pre-training knowledge check will be administered. Students must pass this check to proceed with hands-on training, ensuring training time is used efficiently.

Training Progression and Testing

- Each ITM includes a hands-on exit test that students must pass to be approved for independent instrument use.
- Students must complete prerequisite ITMs before advancing to more complex modules.
- If a student fails the exit test, they must retest. Additional charges will apply for each retest.
- After three failed attempts, the student will:
 - o Either have the analysis performed by an SSW Scientist at standard academic rates
 - o Or be required to restart the ITM from the beginning, and will no longer qualify for flat rate access to that instrument.

Proficiency Maintenance

- If a student has not used an instrument for four months, a refresher course and/or retest will be required. Additional charges may/will apply.

Peer-Assisted Training

- SSW does not allow students to train other students on SSW's instrumentation, even if both are from the same laboratory and/or both enrolled in the flat rate program.

- All training must be conducted by SSW staff members, who are highly experienced and qualified to deliver efficient and effective instruction. This approach guarantees that students receive accurate guidance and meet SSW's operational and safety standards.
- Training will be billed according to:
 - o Instrument Training Module (ITM) pricing, or
 - o Standard academic hourly rates, depending on the instrument and complexity.

Why This Policy Exists

- Ensures compliance with health and safety protocols.
- Maintains high standards for instrument operation and data quality.
- Reduces risk of errors or damage to sensitive equipment.
- Ensures compliance with SSW's ISO quality management system

Instrument Booking

Once a student has successfully completed the required ITM, and has been approved for independent instrument use, they may begin booking instrument time.

Instrument Time

- Students on a flat rate who are trained and approved for a specific instrument may use it as needed for their project. There is no set limit on usage hours, but students must follow these rules:
 - o Pre-book all instrument time slots through the Instrument Owner.
 - o Adhere to any booking restrictions or time limits specific to each instrument.
 - o Be aware that instrument time may be rescheduled if necessary.
 - o SSW staff have priority access to all instruments.

Efficiency Expectations

Time on instruments is valuable as other students and SSW staff may be waiting. Please plan ahead to make the most of your allotted time.

- Instrument time is a shared resource. Students are expected to:
 - o Avoid collecting unnecessary data.
 - o Arrive prepared with a clear plan for their session.
 - o Prioritize efficiency without compromising data quality.

Booking Process

- Students must email or contact the Instrument Owner directly to request instrument time.

- Time will be allocated based on availability, and due to high demand, bookings may often fall outside regular business hours.

Scheduling Guidelines

- Some instruments may have usage limits depending on demand and availability.
- Instrument time may be rescheduled if time-sensitive work arises.
- SSW Staff always have priority access to all instruments.

Staff Priority Hours

- Certain instruments are blocked from 8:00 AM to 12:00 PM on weekdays for SSW staff to complete industrial and time-sensitive work. Please see SSW staff members for when instruments can be booked.
- Additional staff usage outside these hours may occur and will be communicated to flat rate students as early as possible.
- Flat rate students are encouraged to schedule their work outside regular business hours to minimize overlap with staff needs.

Appointment Management

- Typically, only one appointment is granted at a time to ensure fair access for all users.
- Scheduling is generally handled on a first-come, first-served basis.

Tracking and Job Numbers

- Each student will be assigned an SSW job number at the start of each term.
 - o This number is used to track instrument usage and organize data.
 - o Time tracking is for internal purposes only and does not affect billing under the flat rate (except for training or excluded instruments).

Collaboration and Publication Acknowledgements

Proper recognition of SSW is essential when student research benefits from the flat rate program, instrumentation access, and staff expertise. These guidelines ensure transparency and credit for SSW's contributions to academic work.

Student Responsibilities

- Students on the flat rate program must acknowledge SSW and the scientists they have worked with in their:
 - o Thesis/dissertation
 - o Publications
 - o Presentations/posters

Recognition Guidelines

- **Acknowledgement** is appropriate when SSW staff provide training or minimal assistance with data collection and processing.
- **Co-authorship** is expected when SSW staff contribute significantly to data analysis, interpretation, experimental design, or manuscript preparation.

Suggested Acknowledgement Statement

“The authors acknowledge Surface Science Western (SSW) for instrumentation access and technical support, and SSW’s scientific personnel for help with instrument training/data acquisition.”

Why Acknowledgement Matters

- Acknowledging SSW:
 - o Recognizes the support provided through training, instrumentation, and staff expertise.
 - o Helps demonstrate the value of SSW’s academic programs to funding bodies and institutional partners.
 - o Supports continued investment in student training and infrastructure.