

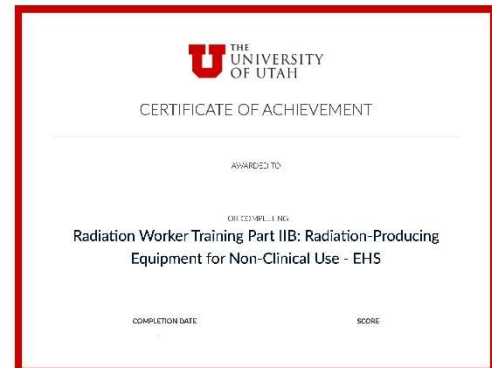
# XRF – Radiation Safety Training

Updated April 25, 2025

The University of Utah requires specific radiation safety training for handheld x-ray devices. That training, as outlined here, must be completed fully before technician-led training can be provided.

## Ionizing radiation-producing equipment

1. Navigate to <https://rso.utah.edu/training/> and follow all instructions for “Ionizing radiation-producing equipment”
  - a. This includes Part I and Part IIB
2. Fill out and submit the RPR1A form using the following answers
  - i. *Responsible User*: Bobby Mohanty
  - ii. *RU #*: Leave blank
  - iii. *Will you be using a radiation generating machine?*: Yes, Accessible Open Beam
3. When you have completed the training, you’ll receive a certificate from the Part IIB training. In addition to any instructions regarding sending the certificate to the radiation safety office, also save a copy of the certificate for yourself.



## Radiation Safety for Handheld XRF – X-ray Tube

1. Navigate to [https://www.thermofisher.com/us/en/home/industrial/spectroscopy-elemental-isotope-analysis/portable-analysis-material-id/xrf-radiation-safety-training.html?icid=CAD\\_ProdPod](https://www.thermofisher.com/us/en/home/industrial/spectroscopy-elemental-isotope-analysis/portable-analysis-material-id/xrf-radiation-safety-training.html?icid=CAD_ProdPod)
2. Open the training course titled “Radiation Safety for Handheld XRF – X-ray Tube.”
  - a. None of the other training courses will fulfill the requirements
3. Register as a new user
4. Once logged in, select “Enroll” for the X-ray Safety for Tube Based Instruments course and walk through the course as directed.

5. Once you have completed the course, close the training window and select the green “Download certificate” button.
6. Send the certificate to [anthony.couey@ehs.utah.edu](mailto:anthony.couey@ehs.utah.edu) to have it added to your training record and save a copy for yourself.



## Final Steps

When both the Ionizing radiation-producing equipment training and the Radiation Safety for Handheld XRF – X-ray tube trainings are completed, email both to [CrusCenterTeam@utah.edu](mailto:CrusCenterTeam@utah.edu) with a request to schedule time with a technician to complete the last step of training. At the in-person training with the technician, you'll get instructions to run the XRF gun and you'll run some scans. Bring a notebook and a sample or two to practice on.

## How to minimize radiation exposure

Analyze your sample(s) only as long as necessary to get the right data.

Keep as much distance between yourself and the XRF as possible.

Never aim XRF at yourself or others

Never hold a sample during analysis

Use shielding always. At a minimum, you must wear the lead apron. Use the test stand as often as possible.

Watch for the x-ray on indicator lights. If they are on, the x-rays are on.

## Recommendations for odd samples

Low atomic weight samples (such as plastics, aluminum, etc.) will scatter more x-rays. They should be shielded more and treated with caution when analyzing.

Samples smaller than 1 cm across may cause the XRF to read elements from the work surface and may scatter more x-rays.

Rounded samples or those that might shift or move during analysis should not be held to stabilize during analysis. Use a book or other thick object to support the sample. Consider using the test stand.