



8824

JEWELLERY REPAIR (12A)

40S/40E/40M

A Jewellery/Metalsmithing Course

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Course Description

This course is intended for students entering the transition phase of the jewellery and metalsmithing program. The curriculum content focuses on an extension of knowledge and skills learned in previous courses to repair jewellery, including ring sizing, chain soldering, clasp repair, retipping, and electroplating. Students use these materials and processes for live jewellery repairs.

Goal 1: Describe and apply appropriate **safety and health** practices as they apply to the jewellery/metalsmithing trade.

GLO 1.1: Create and maintain a **safe workplace**.

- SLO 12A.1.1.1: Follow safe practices and procedures related to facilities, processes, materials, tools, and equipment used in the jewellery studio.
 - SLO 12A.1.1.2: Apply the principles of Workplace Hazardous Materials Information Systems (WHMIS) as they apply to the jewellery studio.
 - SLO 12A.1.1.3: Describe hazards related to processes, materials, tools, and equipment used in the jewellery studio.
 - SLO 12A.1.1.4: Follow the directions of the teacher/supervisor/employer in regard to safe work procedures.
 - SLO 12A.1.1.5: Comply with the laws, regulations, and standards of regulatory agencies and industry associations regarding safety.
 - SLO 12A.1.1.6: Locate first aid kit, eyewash station, fire extinguisher, fire blanket, and emergency power shut off switch.
 - SLO 12A.1.1.7: Demonstrate ventilation procedures, and dust and smoke reduction procedures.
 - SLO 12A.1.1.8: Demonstrate fire prevention and control strategies.
 - SLO 12A.1.1.9: Describe emergency evacuation and response procedures.
 - SLO 12A.1.1.10: Demonstrate safety zone markings and procedures.
 - SLO 12A.1.1.11: Discuss hazards related to compressed gas.
 - SLO 12A.1.1.12: Identify and report hazards (e.g., handling, chemicals, electrical, ergonomics, material handling, spills, and equipment damage) related to tools, equipment, processes, and materials in studio.
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GLO 1.2: Create and maintain **safe and healthy workplace practices.**

- SLO 12A.1.2.1: Explain the chemical points of entry into the body.
 - SLO 12A.1.2.2: Describe and demonstrate appropriate personal protection (e.g., safety goggles/facemask, gloves, respirator mask, hair ties, apron, hearing protection).
 - SLO 12A.1.2.3: Describe the injury reporting process.
 - SLO 12A.1.2.4: Describe the use of fire blankets and fire extinguishers.
 - SLO 12A.1.2.5: Describe the use of an eyewash station.
 - SLO 12A.1.2.6: Demonstrate the ergonomic use of equipment and tools as it relates to bench tools and equipment operation.
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Goal 2: Demonstrate knowledge of the identification, and the safe and appropriate **operation, cleaning, maintenance, and management of equipment, tools, and materials.**

GLO 2.1: Demonstrate the **identification**, and the safe and appropriate **operation of equipment and tools.**

- SLO 12A.2.1.1: Identify hand tools, power tools, equipment, and materials as they pertain to jewellery repair.
 - SLO 12A.2.1.2: Demonstrate the safe and appropriate operation of hand tools as it pertains to jewellery repair.
 - SLO 12A.2.1.3: Demonstrate the safe and appropriate operation of torch as it pertains to jewellery repair.
 - SLO 12A.2.1.4: Demonstrate the safe and appropriate use of the polishing/buffing machines as it pertains to jewellery repair.
 - SLO 12A.2.1.5: Demonstrate the safe and appropriate use of the flex-shaft.
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GLO 2.2: Demonstrate the appropriate cleaning, maintenance, and management of equipment and tools.

- SLO 12A.2.2.1: Demonstrate the daily cleaning, maintenance, and management of equipment and tools as they pertain to jewellery repair.
 - SLO 12A.2.2.2: Discuss the scheduled cleaning, maintenance, and management of equipment and tools as they pertain to jewellery repair.
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GLO 2.3: Demonstrate the appropriate **handling, storage, and management of materials.**

SLO 12A.2.3.1: Demonstrate the appropriate handling, storage, and management of materials and supplies as they pertain to jewellery repair.

Goal 3: Demonstrate an understanding of **metallurgy, gemmology, and the characteristics of jewellery materials.**

GLO 3.1: Demonstrate an understanding of **metallurgy.**

SLO 12A.3.1.1: Demonstrate an understanding of the characteristics of metals as they pertain to jewellery repair.

GLO 3.2: Demonstrate an understanding of **gemmology.**

SLO 12A.3.2.1: Demonstrate precautions and appropriate care of gem materials as they pertain to jewellery repair.

GLO 3.3: Demonstrate an understanding of the **characteristics of jewellery materials.**

SLO 12A.3.3.1: Apply the principles of material characteristics to jewellery repair.

Goal 4: Demonstrate knowledge of the creative **design** of jewellery.

GLO 4.1: Demonstrate knowledge of the creative **design** of jewellery.

SLO 12A.4.1.1: Identify the design problem as it pertains to jewellery repair.

SLO 12A.4.1.2: Research the factors that influence design as they pertain to jewellery repair.

SLO 12A.4.1.3: Recognize and apply the elements of design as they pertain to jewellery repair.

SLO 12A.4.1.4: Identify the function of design as it pertains to jewellery repair.

SLO 12A.4.1.5: Identify the limitations of the materials as they pertain to jewellery repair.

SLO 12A.4.1.6: Develop concept drawings for construction based on design criteria as they pertain to jewellery repair.

Goal 5: Demonstrate an understanding of the **construction, casting, incorporation of components and gemstones, and production techniques** of jewellery creations.

GLO 5.1: Demonstrate the **construction techniques** used in creating jewellery from **sheet and wire**.

SLO 12A.5.1.1: Demonstrate the basic operation of tools and equipment used in jewellery construction using sheet and wire as it pertains to jewellery repair.

SLO 12A.5.1.2: Demonstrate an understanding of soldering techniques as they pertain to jewellery repair.

SLO 12A.5.1.3: Demonstrate the safe and appropriate use of the pickle pot.

SLO 12A.5.1.4: Demonstrate the safe and appropriate use of torch for annealing and soldering.

GLO 5.2: Demonstrate the **lost wax casting techniques** used in creating jewellery.

No applicable SLOs.

GLO 5.3: Demonstrate the **construction** of jewellery incorporating components such as **handmade and commercial findings**.

SLO 12A.5.3.1: Define terminology for findings and jewellery items as it relates to jewellery repair.

SLO 12A.5.3.2: Incorporate findings into construction as they pertain to jewellery repair.

GLO 5.4: Demonstrate **stone-setting techniques**.

No applicable SLOs.

GLO 5.5: Demonstrate **production techniques** in the construction of jewellery.

SLO 12A.5.5.1: Demonstrate the organization of work for the finishing process.

Goal 6: Demonstrate an understanding of the **finishing, polishing, and textural techniques** of jewellery creation.

GLO 6.1: Demonstrate the **finishing techniques** of jewellery creation.

- SLO 12A.6.1.1: Identify the sequence of the finishing steps leading up to polishing as it pertains to jewellery repair.
 - SLO 12A.6.1.2: Identify the tools and equipment used in finishing jewellery as they pertain to jewellery repair.
 - SLO 12A.6.1.3: Demonstrate the sequence of finishing steps as they pertain to metal type, technique, and jewellery design as it relates to jewellery repair.
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GLO 6.2: Demonstrate the **polishing techniques** of jewellery creation.

- SLO 12A.6.2.1: Identify the sequence of polishing techniques as it pertains to jewellery repair.
 - SLO 12A.6.2.2: Select the sequence of polishing techniques during jewellery construction based on metal type, technique, and jewellery design as it relates to jewellery repair.
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GLO 6.3: Demonstrate the **textural finishing techniques** of jewellery creation.

- SLO 12A.6.3.1: Demonstrate techniques for texturing as they relate to jewellery repair.
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Goal 7: Demonstrate knowledge of the **adjustment, modification, and repair** of jewellery.

GLO 7.1: Demonstrate an awareness of situations which require jewellery to be **adjusted, modified, or repaired**.

- SLO 12A.7.1.1: Identify situations in which jewellery would require adjustments, modifications, or repairs as they relate to jewellery repair.
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GLO 7.2: **Adjust** jewellery.

- SLO 12A.7.2.1: Recognize and apply adjustments to the design and function of jewellery creations as they pertain to jewellery repair.
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GLO 7.3: Modify jewellery.

SLO 12A.7.3.1: Recognize and apply modifications to the design and function of jewellery creations as they pertain to jewellery repair.

GLO 7.4: Repair jewellery.

- SLO 12A.7.4.1: Repair jewellery using production techniques.
- SLO 12A.7.4.2: Apply repair techniques to commercial and one-of-a-kind jewellery items.
- SLO 12A.7.4.3: Demonstrate basic chain repair.
- SLO 12A.7.4.4: Demonstrate ring sizing, including sizing up by addition of metal and hammering or stretching, and downsizing by removal of metal.
- SLO 12A.7.4.5: Demonstrate claw retipping.
- SLO 12A.7.4.6: Demonstrate claw replacement.
- SLO 12A.7.4.7: Demonstrate silver and gold electroplating and the ability to create a piece of jewellery and electroplate it.
- SLO 12A.7.4.8: Demonstrate metal testing.
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Goal 8: Demonstrate an understanding of the transferable, **cross-curricular** knowledge and skills as they pertain to the jewellery trade.

GLO 8.1: Read, interpret, and communicate.

- SLO 12A.8.1.1: Read and identify project specifications as they pertain to jewellery repair.
- SLO 12A.8.1.2: Read and identify technical information as it pertains to jewellery repair.
- SLO 12A.8.1.3: Demonstrate the ability to read ring-sizing charts.
- SLO 12A.8.1.4: Demonstrate documentation of jewellery for repair.
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GLO 8.2: Apply mathematics knowledge and skills relevant to jewellery/metalsmithing.

- SLO 12A.8.2.1: Define units of measurement and tools relating to the jewellery trade (e.g., metric and imperial measurements, weights and volumes, gauges) as they pertain to jewellery repair.
- SLO 12A.8.2.2: Demonstrate the use of basic geometry as it pertains to jewellery repair.
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GLO 8.3: Apply **science** knowledge and skills relevant to jewellery/metalsmithing.

SLO 12A.8.3.1: Demonstrate an understanding of the alloy chart for metal testing.

SLO 12A.8.3.2: Discuss the scientific principles behind electroplating.

GLO 8.4: Apply **art** knowledge and skills relevant to jewellery/metalsmithing.

SLO 12A.8.4.1: Demonstrate the creation of a design for project use related to jewellery repair.

SLO 12B.8.4.2: Discuss and apply design elements as related to jewellery repair.

GLO 8.5: Apply **other subject areas** knowledge and skills relevant to jewellery/metalsmithing (art, physical education/health education, information communication and technology, social studies).

SLO 12A.8.5.1: Demonstrate the use of Internet for design development and technical information as it pertains to jewellery repair.

Goal 9: Demonstrate an understanding of **career opportunities** in the jewellery trade and associated professions.

GLO 9.1: Describe education and **career opportunities, and professional organizations** in the jewellery trade and associated professions.

SLO 12A.9.1.1: Discuss education and career opportunities in the jewellery trade and associated professions.

SLO 12A.9.1.2: Discuss professional organizations and benefits, locally and globally.

Goal 10: Demonstrate awareness of **sustainability** as it pertains to the jewellery trade.

GLO 10.1: Describe the impact of **sustainability** on the health and well-being of metalsmiths and their clients.

- SLO 12A.10.1.1: Identify ergonomics and repetitive movement strains as they pertain to jewellery repair.
 - SLO 12A.10.1.2: Discuss sustainability as it relates to the human health and well-being of jewellers/metalsmiths and their clients as it pertains to jewellery repair.
 - SLO 12A.10.1.3: Discuss the impact on health of metal and material allergies, dust, and toxicities as they pertain to jewellery repair.
 - SLO 12A.10.1.4: Demonstrate the proper use of equipment and tools to prevent repetitive strain injuries—ergonomics as it pertains to jewellery repair.
 - SLO 12A.10.1.5: Discuss the purposes of jewellery in regard to history, trade, personal wealth, culture, and personal statements and celebrations as it pertains to jewellery repair.
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GLO 10.2: Describe the trade's **sustainability practices** and impact on the environment.

- SLO 12A.10.2.1: Demonstrate the appropriate disposal and/or recycling of materials and supplies as it pertains to jewellery repair.
 - SLO 12A.10.2.2: Describe and apply the efficient use and disposal of materials as it pertains to jewellery repair.
 - SLO 12A.10.2.3: Discuss chemical hazards on the environment as introduced as they pertain to jewellery repair.
 - SLO 12A.10.2.4: Demonstrate a basic knowledge of efficient material usage to reduce waste and its impact on the environment.
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GLO 10.3: Describe **sustainable business practices** within the jewellery trade.

- SLO 12A.10.3.1: Demonstrate sustainable business practices within the jewellery trade as they relate to jewellery repair.
 - SLO 12A.10.3.2: Describe the impact of the changing world market values of metals and materials on jewellery repair.
 - SLO 12A.10.3.3: Discuss lifelong learning of trends, fashion, and technology as they relate to jewellery repair.
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Goal 11: Demonstrate **awareness of the ethical and legal standards** as they pertain to the jewellery trade.

GLO 11.1: Practise the **ethical and legal standards** as they pertain to the jewellery trade.

SLO 12A.11.1.1: Practise the ethical and legal standards as they pertain to jewellery repair.

SLO 12A.11.1.2: Demonstrate an understanding of the legal standards of hallmarking for metal content as they pertain to jewellery repair.

Goal 12: Demonstrate knowledge of the **employability skills** related to the jewellery trade.

GLO 12.1: Demonstrate the **fundamental employability skills**.

SLO 12A.12.1.1: Demonstrate problem-solving skills.

SLO 12A.12.1.2: Demonstrate critical-thinking skills.

SLO 12A.12.1.3: Demonstrate regular attendance and punctuality.

SLO 12A.12.1.4: Demonstrate accountability by taking responsibility for one's actions.

SLO 12A.12.1.5: Demonstrate adaptability, initiative, and effort.

SLO 12A.12.1.6: Demonstrate the ability to accept and follow direction and feedback.

SLO 12A.12.1.7: Demonstrate teamwork skills.

SLO 12A.12.1.8: Demonstrate the ability to stay on task and use class and studio time effectively.

SLO 12A.12.1.9: Demonstrate the ability to communicate respectfully and effectively with co-workers and customers.

SLO 12A.12.1.10: Demonstrate the ability to maintain an organized work area and use equipment, tools, and materials respectfully.

SLO 12A.12.1.11: Demonstrate appropriate dress for safe work with equipment and tools.

GLO 12.2: Demonstrate an understanding of the **business operation** of a jewellery/metalsmithing trade.

SLO 12A.12.2.1: Demonstrate the calculations of metal costs for projects.

SLO 12A.12.2.2: Demonstrate record keeping as it pertains to jewellery repair.

Goal 13: Understand the **evolution and technological progression of, and the emerging trends in** the jewellery/ metalsmithing trade.

GLO 13.1: Describe the **evolution and technological progression of, and the emerging trends in** the jewellery trade.

SLO 12A.13.1.1: Discuss the evolution and technological progression of, and the emerging trends in the jewellery trade as they pertain to jewellery repair.

SLO 12A.13.1.2: Demonstrate the use of new technology as it pertains to jewellery repair.
