

## **European Iron Academy 2016 – Part 1**

Guidelines Erasmus+

### **Record of current rules, regulations and institutions for training and advanced education for blacksmiths and metalwork designers**

**Country: Italy**

This questionnaire is for recording the current rules, regulations and possibilities for training and advanced education for blacksmiths and metalwork de-signers in the countries of the European Community.

1. Which Ministry is responsible for the education and employment in your country?

Ministero del Lavoro e delle Politiche Sociali, Via Palermo 110, 06124 Perugia Giuliano Poletti [www.lavoro.gov.it](http://www.lavoro.gov.it)

Ministero dell'istruzione, dell'università e della ricerca, V.le Trastevere 76/a, 00153 Roma Laura Fedeli [www.miur.it](http://www.miur.it)

2. Which professional trade/associations are responsible for blacksmiths and metal workers in your country?

Professional associations and other bodies:

-CNA and Confartigianato (for the artisans) P.za Armellini 9A, 00162 Roma [www.cna.it](http://www.cna.it)

-Associazione Industriali (for industry ie. Metalworkers) various addresses in every region

-CONFABIT (blacksmith consortium in Italy) Via Torino 1/a bis, 37020 Negrar (VR)  
[www.confabit.it](http://www.confabit.it)

3. Who is legally responsible for the training of blacksmiths and metal workers in your country? *That is: are there schools (state, private, training agencies) who provide preparation and training for young blacksmiths and metal workers?*

There are no institutions in Italy who are legally responsible for training in this field. The state only provides guidelines for the identification of competencies. Training is transferred to: Secondary Schools for basic training, Universities for higher training, Regions for vocational training (VET). The regions then create courses and help Training Agencies who will carry out those courses.

4. Which schools (including schools financed by the government or private schools) in your country provide training/education for young blacksmiths and metalwork designers?

- *Are there any conditions in order to be accepted?*
  - *Is the education divided into 8 NQF/EQF levels?*
  - *Who conducts the practical and theoretical exams?*
  - *Who issues the certificates of the obtained level?*
  - *Do any subsidies/benefits/loans exist at a regional or national level in order to support training in this field?*

According to the characteristics of the courses the students are asked for the necessary requirements in order to access it (ie lower middle school diploma or diploma). In order to obtain the eligibility at the end of the course the student is examined by a designated exam commission or by an Evaluation Team which is attended by an official of a public body. Certificates are issued by the public schools, universities and accredited Training Agencies. There is some type of help, in particular through the use of ESF (European Social Fund) for both the employed and the unemployed; Law 236/93 and interprofessional funds which are only for the employed. The education is divided into the 8 levels, but for blacksmith training it would start at an equivalent of EQF level IV.

5. How does one become a blacksmith trainee, journeyman or a master craftsman?  
*(Occupational training in internet? Who issues the certificates?)*

In Italy there are no existing institutional schools for blacksmith training, whilst, for those that concern metalworking, the training takes place through technical high schools, Training Agencies, and later through apprenticeship. For blacksmiths the tradition of training in “workshop schools” is still very much alive, even though there aren’t as many as there once were. However, some private schools exist with training courses at various levels lasting for a weekend whilst others are weekly, or sometimes longer, offering different opportunities.

6. Are there free schools, academies which convey knowledge to blacksmiths and metalworkers?

There are no specialised schools for the formation of blacksmiths and metal workers.

However, there are associations which operate in this field (Associazione Autonoma per la Biennale d'Arte Fabbri, Consorzio Confabit) who are able to guarantee specific training activities for these professional figures.

7. Are there leading metalworker designers/companies (Stakeholders) in your country who take care of training and advanced education? (for example, who offer traineeships or support journeymen.)

ISFOL, CNA, Confartigianato, CONFABIT, Industrial Associations, Regions, Ministry for Labour and Social Policies.

8. Are there institutes, academies or schools in your country which take care of advanced education (special knowledge)? (*e.g. working with metal in the preservation of ancient buildings / architecture / tools/ construction/ historical techniques or methods / blacksmiths / carriage makers*)

We are only aware that some associations or private schools offer some type of advanced education, but we don't know anything about what public schools, universities or Training Agencies offer.

9. Which networks are available nationally and internationally for blacksmiths and metalworkers? (*e.g. Internet information platforms, discussion groups, free organisations etc.*)

There are no institutional forums in Italy. Blacksmiths compare and confront themselves by using social networks (Facebook). Websites do exist ([www.biennaleartefabbrile.it](http://www.biennaleartefabbrile.it)) whereby blacksmiths can find information about their work and look for news regarding training. For metallurgy in general (welding, jewellery,...) there are non-institutional forums.

Additionally, there are no online professional courses related to this sector, given the particular workmanship required.

10. Media: what printed matter and internet media are available in your country?

Printed: there are quite a few books in Italian. The English translation of some of these books: Damascus: forging techniques; Non-ferrous alloys and metals; Wrought Iron; Italian Masters of wrought iron; Project of gates in wrought iron; Projects of wrought iron; Italian wrought iron art; The great book of wrought Iron; Artists and sculptors of wrought iron; The metallurgists of Italy in Their union; Designing with steel; Mechanical metallurgy; Metallic materials; Stainless steels; Sheet metal working manual; Welding techniques; Welding manual; Easy guide to welding; Welding of oxyacetylene and electrical metals; Welding and cutting of metals; Goldsmiths: antique and modern metalworking techniques; Metalworking..... and so forth....

Internet: some educational material can be found online....universities who post texts regarding metallurgy (ie. [www.metallurgia.unicas.it](http://www.metallurgia.unicas.it)),

11. Which technical literature is offered in your language?

There is no specific literature on wrought iron. The texts which are available are mainly monographs, catalogues, collections of blacksmith work. As for metalwork, we refer you to look at school text books.

12. Please indicate any weaknesses you may have noticed in the training of blacksmiths and metal workers as well as what would be useful to include in the future, **using the list below**:

## **MAIN AREAS OF TECHNIQUES (methods) AND FIELDS OF TRAINING**

### **Steel / stainless steel**

Material science

Correct firing guides / correct handling of wrought fire

Forge welding

Welding: process: 111 Metal-arc welding with covered electrode

Process: 131 Metal-arc inert gas welding MIG-welding

Process: 135 Metal-arc active gas welding MAG-welding

Process: 141 Tungsten inert gas arc welding TIG -welding

Process: 311 Oxy-acetylene welding

Tool-making: forceps (tongs), hammer, punch

Basic techniques of forging: forging by hand, with a mechanical hammer

Techniques/Methods: punching holes, gorging (elbowing), splitting

Twisting

Pipe bending without machines: free bending according to size

Manufacture of tools for the above-mentioned techniques/methods

### **Methods of Joining**

Surface engineering: black annealing (oil blacking)

Splitting techniques: metal fittings, ornaments

Inlay work

Historic ornaments: identification of such, implementation

Sacred and mundane ornaments

### **Planning – Draft – Drawing of Object**

Design training: search for possible shapes/designs, shaping of form/design

## **Restoration – Reconstruction**

Corrosion protection for historic works

## **Non-ferrous metals (Copper and Bronze)**

Material science

Basic methods: annealing, handling (treatment)

Soldering: soft and hard soldering

Welding:           Process: 131 Metal-arc inert gas welding MIG-welding

                          Process: 141 Tungsten inert gas arc welding TIG -welding

                          Process: 311 Oxy-acetylene welding

Handling: calculating

Handling: metal plates, hollow parts

Handling: ornaments

Deformation: construction of tools from sheet metal or tube blanks

Coating: construction of tools

Deformation of ornaments: relief

Colouring of copper and copper alloys

Joining: riveting, crimping

Tin coating of copper and copper alloys

Forging of copper and copper alloys

Corrosion protection, surface protection

Restoration, reconstruction

Cast bronze: methods

Historic works: identification

## **Interconnection with other materials: glass, stone ...**

## **LE PRINCIPALI AREE DI TECNICHE (METODI) E SETTORI DELLA FORMAZIONE**

*Si prega di verificare se e in che qualità dei centri di formazione, scuole, accademie e gli istituti nel vostro paese hanno incluso le seguenti competenze a loro programmi di formazione. Si prega di aggiungere competenze mancanti alla lista.*

### **✕ Acciaio / acciaio inox**

#### **✕ Scienza dei materiali materiale**

Corretta gestione del fuoco / forgiatura del ferro battuto

Saldatura a bollitura

- ✕ Saldatura:      processo: 111 Metal-saldatura ad arco con elettrodo coperto  
                         Processo: 131 Metal-arc saldatura a gas inerte MIG-saldatura  
                         Processo: 135 Metal-arc saldatura a gas attivo MAG-saldatura  
                         Processo: 141 Tungsten arco gas inerte saldatura TIG -Saldatura  
                         Processo: 311 Oxy-acetilene saldatura

Costruzione attrezzi: pinze, martello, punzoni

Tecniche di base di forgiatura: forgiatura a mano, con un maglio

Tecniche / Metodi: fori di punzonatura, corretto uso della mazza, sezionatura

#### **✕ Torsione**

Curvatubi senza macchine: piegatura libera in base alle dimensioni

Costruzione attrezzi / suddetti metodi

### **Metodi di giunzione**

#### **✕ ingegneria delle superfici: brunitura a olio**

#### **✕ tecniche di taglio: giunzioni metalliche, ornamenti**

intarsio o ageminatura

ornamenti storici: l'identificazione di tali, realizzazione

arredi sacri e mondani

#### **progettazione-bozza o schizzo - Disegno di oggetti**

Corso di disegno: la ricerca di possibili forme / disegni, modellatura della forma / design

### **Restauro - Ricostruzione**

Protezione contro la corrosione per le opere storiche

*FAC - SIMILO*



1. Chi é legalmente responsabile per la formazione dei fabbri e della metallurgia nel vostro Paese?

Ovvero: ci sono Scuole (statali, private o agenzie formative) o aziende che forniscono la preparazione e la formazione per giovani fabbri e lavoratori nella metallurgia?

LA FORMAZIONE AVVIENE DA CORSI ORGANIZZATI DALLA REGIONE

- esiste un forum o un blog o simile che permetta lo scambio di notizie e conoscenze tra persone interessate alla materia? *NON SO*
- esistono corsi online per la formazione professionale nel settore suddetto? Se si, chi rilascia i certificati in questo caso? *NON SO NON E' IL MIO SETTORE*

2. Come si diventa operaio specializzato nel settore metallurgia, fabbro apprendista o maestro artigiano?

*DOPO UN DIPLOMA DI UNA SCUOLA AD INDIRIZZO PROFESSIONALE - STATALE -*

3. Quale letteratura tecnica cartacea o virtuale é disponibile nel vostro Paese?

*NON SO*

4. Esistono nel vostro Paese figure di stakeholders che si occupano della formazione e specializzazione in questo settore?

*~~NON SO~~ SI ESISTONO TRAMITE CORSI SCUOLA LAVORO ORGANIZZATI DA ISTITUTI TECNICI (per es. esiste un offerta di tirocinio o sostegno tecnico o economico per sostenere la formazione e favorire l'accesso al lavoro?)*

5. Segnalateci quali, secondo voi, sono le carenze che si rilevano nella formazione dei fabbri e operai metallurgici e cosa sarebbe auspicabile avere in futuro

*UN PIU' STRETTO DIALOGO TRA LA REALTA' PRODOTTIVE E LE SCUOLE AD INDIRIZZO PROFESSIONALE*

Si allega un elenco dettagliato delle principali aree tecniche e settori di formazione. Barrare quelle che esistono ed eventualmente aggiungere quelle mancanti alla lista.

*FAR SIMILE*

**Metalli non ferrosi (rame e bronzo)**

- ✗ Scienza dei materiali
- ✗ Metodi di base: ricottura, trattamenti termici
- ✗ Saldatura: morbida e brasatura forte
- ✗ Saldatura:    Processo: 131 Metal-arco di saldatura gas inerte MIG saldatura  
                  Processo: 141 Tungsten arco gas inerte saldatura TIG -Saldatura  
                  Processo: 311 Oxy-acetilene saldatura
- ✗ Trattamento-lavorazione: calcolo  
                                  lamiere, metallo tubolare: trattamento-lavorazione  
                                  trattamento-lavorazione: Ornamenti
- ✗ lavorazione: costruzione di strumenti da lamiera o tubi vuoti  
                                  patinatura: costruzione di strumenti
- ✗ Lavorazione di ornamenti: sbalzatura  
                                  La colorazione di rame e leghe di rame
- ✗ Unire: rivettatura, chiodatura-ribattitura  
                                  stagnatura del rame e leghe di rame  
                                  Forgiatura di rame e leghe di rame
- ✗ Protezione contro la corrosione, protezione delle superfici
- ✗ Restauro, la ricostruzione  
                                  bronzo fuso: metodi di fusione del bronzo  
                                  opere storiche: l'identificazione-riconoscimento-individuazione

**Interconnessione con altri materiali: vetro, pietra ...**

*FAC - SIMILO*

Maria Gemma Bendoni  
Presidente

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