

# TRAINING PROGRAM

## 1 - Training goals

- Development of a mechanical, useful or artistic object according to an original model made of wood, plaster, metal, plastic, clay.
- During the training, the copy will be made in bronze. With a similar process, it would be possible to obtain a lead, tin or silver copy. You could as well obtain a copy using other materials which do not need fusion, like plaster, reconstituted stone or resin.

## 2 - Studied subjects

During the training, you will study the nature, the various uses, the conditioning, the prices and the suppliers of the materials used :

- for shell casting : colloidal silica, ethyl silicate, zircon.
- pure or fired clay, plastiline ; plaster. of Paris.
- lacquer, vaseline, black soap. Definitive hardening elastomers : RTV, latex ; reusable moulding materials: : vinamold, gelatine; composition of the investment moulding materials, silica fibres for temperatures ranging from 700° to 1400°, propane.

## 3 - Moulding techniques studied : bloc moulds and shell moulds, casting.

- You will learn how to make an elastomer mould.
- You will learn how to obtain a wax copy from this mould, to arrange the sprues and vents, to wrap the wax in the refractory investment.
- You will understand and experience the fusing of the investment mould, the melting of the bronze and its flowing, the chiselling, the patina and the polishing.

## 4 - Equipment used.

- Drill, disc saw, grinding wheel, high pressure water cleaner (150 bars).
- Mould heating oven and bronze fusing furnace. We will give a practical and economical fabrication method.
- Control of the oxidizing and the reducing functioning.
- Temperature determination according to the inside colour of the furnace.,
- The gaz reducers. The incidents, the chiselling tools, their fabrication, sharpening, quench temper.
- The bronze welding. The bronze patina.

## 5 - The trainer

- INSA Engineer + MBA Aix en Provence. Career in steel plants and mine industry.

## 6 - Duration of the training course : 5 days, from Monday at 9 AM to Friday at 7 PM.

\*The training period will be oriented either on bloc moulds or totally on shell casting moulds.

## 7 - Training program. Case of bloc moulds \*

- MONDAY** 9 to 10 AM General explanation of the lost wax casting method, with the help of photographs and diagrams.  
10 to 11 AM Presentation of the studio and tools.  
11 to 12 AM Study of the model to work out . Envisaged separations.  
2 to 7 PM Working out of the RTV and plaster mould. Pouring the wax
- TUESDAY** 9to 12 AM Working out of the wax-copy..  
2 to 7 PM Disposition of spues and vents.  
Preparation of the different investment coatings.  
Preparation of the wire reinforcement nettings of the final envelope.  
Temperature rising curve and position of the mould in the oven.  
Contact and final coating to realise the complete mould  
- 22PM Loading of the oven. Beginning of the heating.
- WEDNESDAY** During the whole day, observation of the temperature increase, its logging, explanation of the observed phenomena.  
Explanation concerning a practical and economical achievement of a mould heating oven and bronze casting furnace.  
Bronze flowing exercise.Patina exercise.  
Prices and addresses of the basic products used during the course.  
Duration and price of the achievement of a bronze object. according to its size.
- THURSDAY** 9 to 10AM Removing of the moulds,putting and blocking them in a sand bed belt.  
10 to 11 AM Flowing of the bronze.  
11 to 12 AM Turning out. Cutting of the sprues and vents.Repairs .  
2 to 7 PM Chiselling and patina.
- FRIDAY** 9AM to 1PM Chiselling and-patina. Cleaning of the shop

**8 - Location of the training period :** Mas de la Châtère 84290 Sainte Cécile Les Vignes  
Provence , South of France.

**9 - Accomodation and meals** on the premises.

**10 .Number of trainees : 6**

**11 -Price of training = 2030€ ,**

For people having no financial help through a training fund help , the price of the course is **800€**  
accommodation and meals included.

**12 -** The trainee has to bring a sculpture of 15 cm high or lenth. It is excluded to come with a higher sculpture.

**13 -** We can pick you up at the Avignon (south of France) railway station with no additional charge.

**14 -** You can arrive on Sunday evening without additional charge.

**15 -** Courses can be given in French, English, Spanish, Italian,.

**16 -**Trainings start two times each three months.

**17 -** For reservation, please send us back the Inscription Document. No earnest money to send.

\* For the case of shell casting moulds, the proceedings will be slightly different.