

AALIM MUHAMMED SALEGH COLLEGE OF ENGINEERING

DEPARTMENT OF MECHANICAL ENGINEERING

CIRCULAR

AMSCE/ME/VAC002/2022-2023

It is informed to all the students of Mechanical Engineering, it is proposed to conduct Value Added Courses on “**WELDING & CUTTING PROCESS**” (30 hours duration) offered in our campus **Manufacturing Laboratory** that the course starts from 16.08.2022 to 24.09.2022. Detailed Schedule along with information for taking up this Industry based courses are shared before the commencement of the program. All the students of third year Mechanical Engineering are requested to follow the guidelines given to derive the maximum benefits from the resource person.

Note:

- *Safety rules and regulations must to be followed.
- *Minimum 80 % attendance mandatory to receive the certificates.
- *Assessment Test will be conducted at the end of session.

RESOURCE PERSON:


Prof.Dr.S.Sathish M.E., Ph.D.,

Principal -AMSCE

Mr. Mohanbabu -Workshop Superintendent


5/8/22
Head – Mechanical Engineering




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DEPARTMENT OF MECHANICAL ENGINEERING

Organise
Value Added Course
on
“Welding and Cutting Process”



Course Details:

Resource Person:

Dr. S. Sathish, Professor, Department of Mechanical Engineering.

Duration: 30Hrs

Course start: 16/08/2022 to 24.09.2022

Time: 1.00pm to 5:00pm.

Venue: Manufacturing Laboratory, Mechanical/Civil Block.

Contact (resource person): +91-9894260193

Course Objectives:

- **Fundamental Understanding of Welding and Cutting Processes:** Develop a solid foundation in the principles and theories underlying various welding and cutting processes. Participants will gain knowledge about different techniques, including arc welding, gas welding, laser cutting, and plasma cutting, and understand their applications in different industrial contexts.
- **Technical Proficiency and Hands-On Skills:** Equip participants with practical skills and technical proficiency in performing welding and cutting operations. Through hands-on training sessions and laboratory exercises, learners will practice and master essential techniques, ensuring they can execute tasks safely and effectively.



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DEPARTMENT OF MECHANICAL ENGINEERING



REPORT FOR THE VALUE ADDED COURSE ON WELDING AND CUTTING PROCESS

Course Name: WELDING AND CUTTING PROCESS

Date: 16/08/2022 to 24.09.2022

Time: 1.00 pm to 5.00pm

Course Hours: 30 hrs

Attended Students: 30

Students Certified: 30

Course Objectives:

1. **Understand the fundamentals of welding and cutting processes** including their physical principles, advantages, and limitations.
2. **Explore various welding techniques** (e.g., arc welding, MIG, TIG, and resistance welding) and their applications in different materials.
3. **Study cutting processes** such as oxy-fuel cutting, plasma cutting, and laser cutting.
4. **Learn about welding safety practices** and proper handling of equipment and materials.
5. **Apply theoretical knowledge to practical scenarios** through hands-on demonstrations and projects.

Key Topics Covered:

1. **Introduction to Welding and Cutting:**
 - o Definition and history of welding and cutting.
 - o Types of joints and their importance in welding.
 - o Overview of welding equipment and accessories.
2. **Welding Processes:**
 - o **Arc Welding:** The basic principles, types (MMA, MIG, TIG, Flux-cored), and applications.
 - o **Gas Welding (Oxy-acetylene):** Uses of oxygen and acetylene gases for welding and cutting.
 - o **Resistance Welding:** Spot and seam welding techniques.
 - o **Specialized Welding:** Plasma arc welding, electron beam welding, laser welding, and more.
3. **Cutting Processes:**




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- **Oxy-Fuel Cutting:** Basic operation, advantages, and applications in ferrous and non-ferrous metals.
- **Plasma Cutting:** Principles, operation, and safety.
- **Laser Cutting:** Technology behind laser cutting and its industrial applications.
- 4. **Welding Materials:**
 - Types of metals and alloys (steel, aluminum, stainless steel) and their weldability.
 - Filler materials: types of electrodes and rods.
 - Surface preparation and cleaning methods.
- 5. **Safety in Welding and Cutting:**
 - Personal protective equipment (PPE) and its importance.
 - Hazards associated with welding and cutting processes (e.g., fumes, heat, UV radiation).
 - Safety precautions and emergency response procedures.
- 6. **Welding Inspection and Testing:**
 - Visual inspection and non-destructive testing (NDT) methods.
 - Importance of weld quality in terms of strength, durability, and appearance.
 - Common welding defects and their remedies.
- 7. **Practical Applications:**
 - Hands-on practice with different welding and cutting techniques.
 - Real-world projects involving welding and cutting.
 - Understanding industry standards and certifications (e.g., AWS, ASME).

Learning Outcomes:

Upon completion of the course, students will be able to:

- Identify and select the appropriate welding or cutting process based on material type, thickness, and project requirements.
- Demonstrate proficiency in various welding techniques and understand the associated equipment.
- Apply safe practices while welding and cutting, ensuring a safe work environment.
- Inspect and assess the quality of welds, identifying potential defects.
- Gain basic skills for practical, real-world welding tasks in industries like construction, manufacturing, and automotive.

This course is ideal for:

- Aspiring welders and fabricators.
- Engineers, technicians, and anyone working in fields requiring welding and cutting knowledge.
- Individuals interested in upgrading their skills for industrial applications.

Conclusion

This course is essential for anyone looking to pursue a career in welding, metal fabrication, or manufacturing, providing both foundational theory and valuable hands-on experience.




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From

Date: 08-08-2022

The Head of the Department
Department of Mechanical Engineering,
Aalim Muhammed Salegh college of Engineering,
Muthapudupet, Avadi, I.A.F.,
Chennai- 600 055.

To

The Principal,
Aalim Muhammed Salegh college of Engg.
Muthapudupet, Avadi I.A.F.,
Chennai - 600 055.

Sub: Requisition for the Approval to conduct Value Added Course
in Mechanical department - Regarding.

Respected Sir,

We would like to conduct a Value Added Course on the title "Welding and Cutting Process" for third year mechanical students by the resource person Prof. Dr.S.Sathish, Principal , Department of Mechanical Engineering, Aalim Muhammed Salegh College of Engineering, Chennai, who will be organizing the course. The scheduled date for the value added course is from 16/08/2022 to 24/09/2022. We kindly request you to provide approval for the same.

Thanking you

Approved to organize
the above Value Added
Course -

Yours Faithfully
J. Sathish
HOD/MECH

Date
08/8/2022



Principal
AALIM MUHAMMED SALEGH
COLLEGE OF ENGINEERING
AVADI - (IAF, MUTHAPUDUPET)
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DEPARTMENT OF MECHANICAL ENGINEERING


Value Added Course Details



Course Name: Welding and Cutting Process . Date : 16-08-2022 to 24-09-2022
Time: 1.00 p.m to 5.00 p.m

| Duration | Content | Total Hours |
|-------------------------|--|--------------------|
| 16-08-2022 & 23-08-2022 | Topic : 1 Introduction to welding processes: <ul style="list-style-type: none">• Introduction to consolidation processes• Design considerations, Weld ability and join ability• Elements of and construction of welding symbols | 8 |
| 25-08-2022& 01-09-2022 | Topic : 2 Welding power sources <ul style="list-style-type: none">• Requirement of an Arc welding power sources• basic characteristics of power sources for various arc welding processes• Selection of a static Volt-Ampere characteristic for a welding process• Mathematical Problems on Static volt ampere characteristics | 8 |
| 03-09-2022 & 17-09-2022 | Topic : 3 Welding Metallurgy <ul style="list-style-type: none">• Fundamentals of physical metallurgy• Solidification of weld metal• Metallurgical issue in weld joint: | 8 |
| 20-09-2022& 24-09-2022 | Topic: 4 Metal transfer & Melting rate <ul style="list-style-type: none">• Mechanism and types of metal transfer• Forces affecting metal transfer• Modes of metal transfer• Metal transfer in various welding processes | 6 |
| Total Hours | | 30 |




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Approved by All India Council for Technical Education - New Delhi, Affiliated to Anna University, Chennai
NAAC Accredited Institution

"Nizara Educational Campus", Muthapudupet, Avadi - IAF, Chennai - 600 055.

ANNA UNIVERSITY COUNSELLING CODE : 1101



Value Added Course Tentative Time Table And Schedule

Value Added Course Name: Welding and Cutting Process

Date of Commencement: From 16/08/2022

Timing 1.00 pm to 5.00 pm

Tentative Date of Exam- 24/09/2022

Tentative Course Schedule - 16/08/2022 to 24/09/2022 (As per following)


No. Of Days: 8

Course Hours: 30

Speaker: Dr.S.SATHISH

1. Topic -1: Introduction to welding processes:- 16/08/2022 & 23-08-2022 – 8 hrs
2. Topic -2: Welding power sources ; - 25-08-2022 & 01-09-2022 – 8 Hours
3. Topic -3: Welding Metallurgy:- 03-09-2022 & 17-09-2022 – 8 Hours
4. Topic -4: Metal transfer & Melting rate- 20-09-2022 & 24-09-2022 – 6 Hours




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DEPARTMENT OF MECHANICAL ENGINEERING

COURSE ON "WELDING AND CUTTING PROCESSES"

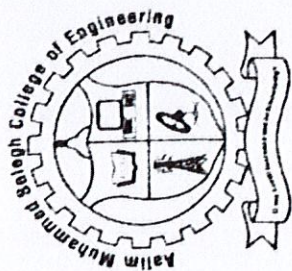
STUDENTS ATTENDANCE LIST

COURSE INSTRUCTOR:

| REG NO | NAME | 16/8/22 | 23/8/22 | 25/8/22 | 01/9/22 | 09/9/22 | 17/9/22 | 20/9/22 | 24/9/22 |
|--------------|-----------------------------|------------|------------|------------|------------|------------|------------|------------|------------|
| 110119114027 | MOHAMED SHAMEEM F | Shameem | Shameem | Shameem | Shameem | Shameem | Shameem | Shameem | Shameem |
| 110119114028 | MOHAMED ZAKKARIYA S | Zakir | Zakir | Zakir | Zakir | Zakir | Zakir | Zakir | Zakir |
| 110119114029 | MOHAMMAD ZUBER SK | Zuber | Zuber | Zuber | Zuber | Zuber | Zuber | Zuber | Zuber |
| 110119114030 | MOHAMMED ABDULLAH RIYAS P | Riyas | Riyas | Riyas | Riyas | Riyas | Riyas | Riyas | Riyas |
| 110119114031 | MOHAMMED ARAFATH M | Arafath | Arafath | Arafath | Arafath | Arafath | Arafath | Arafath | Arafath |
| 110119114032 | MOHAMMED ARSHATH A | Arshath | Arshath | Arshath | Arshath | Arshath | Arshath | Arshath | Arshath |
| 110119114033 | MOHAMMED BILAL N | Bilal | Bilal | Bilal | Bilal | Bilal | Bilal | Bilal | Bilal |
| 110119114034 | MOHAMMED FAIZAL P | Faizal | Faizal | Faizal | Faizal | Faizal | Faizal | Faizal | Faizal |
| 110119114035 | MOHAMMED HAFIZ R | Hafiz | Hafiz | Hafiz | Hafiz | Hafiz | Hafiz | Hafiz | Hafiz |
| 110119114036 | MOHAMMED MUZZAMMIL A | Muzamil | Muzamil | Muzamil | Muzamil | Muzamil | Muzamil | Muzamil | Muzamil |
| 110119114037 | MOHAMMED YUNUSH M | Yunus | Yunus | Yunus | Yunus | Yunus | Yunus | Yunus | Yunus |
| 110119114038 | MUHAMMAD MUSHTHAQ A | Mushthaq | Mushthaq | Mushthaq | Mushthaq | Mushthaq | Mushthaq | Mushthaq | Mushthaq |
| 110119114039 | RAHUL KRISHNA S | Rahul | Rahul | Rahul | Rahul | Rahul | Rahul | Rahul | Rahul |
| 110119114040 | RIYAS AHAMED K | Riyas | Riyas | Riyas | Riyas | Riyas | Riyas | Riyas | Riyas |
| 110119114041 | SHAHUL HAMEED S M | Shahul | Shahul | Shahul | Shahul | Shahul | Shahul | Shahul | Shahul |
| 110119114043 | SYED ABID HUSSAIN A | Abid | Abid | Abid | Abid | Abid | Abid | Abid | Abid |
| 110119114044 | SYED MOHAMED ABDUL KAYOUM H | Kayoom | Kayoom | Kayoom | Kayoom | Kayoom | Kayoom | Kayoom | Kayoom |
| 110119114045 | SYED MOINUDDIN AMBENULLAH | Ambenullah | Ambenullah | Ambenullah | Ambenullah | Ambenullah | Ambenullah | Ambenullah | Ambenullah |
| 110119114046 | VIJAY S | Vijay | Vijay | Vijay | Vijay | Vijay | Vijay | Vijay | Vijay |
| 110119114047 | VIMAL RAJ G | Vimal | Vimal | Vimal | Vimal | Vimal | Vimal | Vimal | Vimal |
| 110120114001 | Abdur Rahim A B | Abdur | Abdur | Abdur | Abdur | Abdur | Abdur | Abdur | Abdur |
| 110120114002 | Ameer Abdullah A A | Ameer | Ameer | Ameer | Ameer | Ameer | Ameer | Ameer | Ameer |
| 110120114003 | Ameerudeen D | Ameer | Ameer | Ameer | Ameer | Ameer | Ameer | Ameer | Ameer |
| 110120114004 | Amresh Pattanaik | Amresh | Amresh | Amresh | Amresh | Amresh | Amresh | Amresh | Amresh |
| 110120114005 | Bathula Pranay Kumar Reddy | Bathula | Bathula | Bathula | Bathula | Bathula | Bathula | Bathula | Bathula |
| 110120114006 | Deva Renil D D | Deva | Deva | Deva | Deva | Deva | Deva | Deva | Deva |
| 110120114007 | Giri M | Giri | Giri | Giri | Giri | Giri | Giri | Giri | Giri |
| 110120114008 | Jaffar sadiq S | Jaffar | Jaffar | Jaffar | Jaffar | Jaffar | Jaffar | Jaffar | Jaffar |
| 110120114009 | Mohamed Arsath H | Arsath | Arsath | Arsath | Arsath | Arsath | Arsath | Arsath | Arsath |
| 110120114010 | Mohamed Arshad D | Arshad | Arshad | Arshad | Arshad | Arshad | Arshad | Arshad | Arshad |



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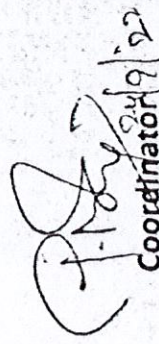
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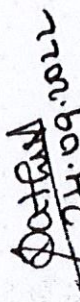


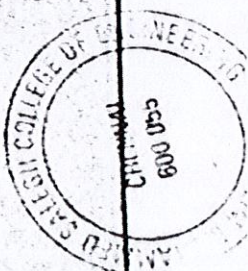
Certificate

This is to certify that MR. MOHAMMED ABRAHAM
Of Aalim Muhammed Salegh College of Engineering has participated
and successfully completed a Value Added Course on
WELDING AND CUTTING PROCESSES Mechanical Engineering
conducted by Department of
during 16/08/22 To 24/09/22 [30 HOURS]



24/09/22
Coordinator
Mr. P. Munitiraja Chandra
Assistant Professor

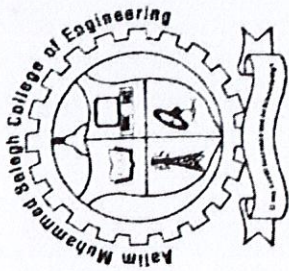

24/09/22
Head
Dr. S. Ramkumar
Assistant Professor


24/09/2022
Principal
Dr. S. Sathish
Professor



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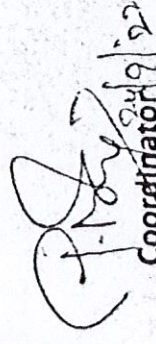
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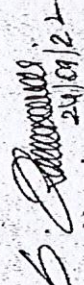
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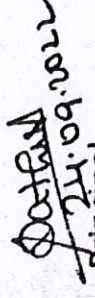


Certificate


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Of Aalim Muhammed Salegh College of Engineering has participated
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WELDING AND CUTTING PROCESSES Mechanical Engineering
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Coordinator 24/09/22
Mr. P. M. Chandra
Assistant Professor

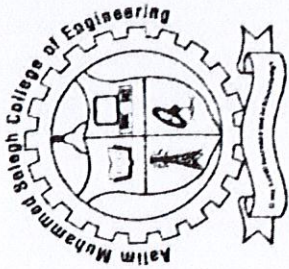

Head 24/09/22
Dr. S. Ramkumar
Assistant Professor


Principal 24/09/22
Dr. S. Sathish
Professor




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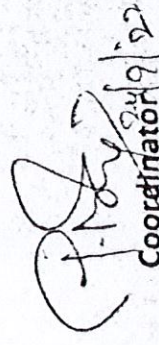
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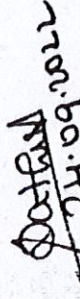


Certificate

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WELDING AND CUTTING PROCESSES Mechanical Engineering
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during 16/08/22 To 24/09/22 [30 HOURS]


Coordinator 24/09/22
Mr. P. M. M. Chandra
Assistant Professor

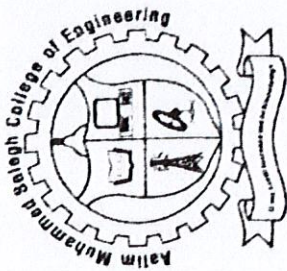

Head 24/09/22
Dr. S. Ramkumar
Assistant Professor


Principal 24/09/22
Dr. S. Sathish
Professor



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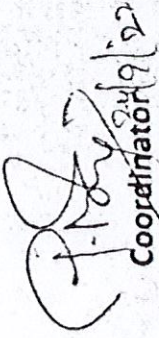
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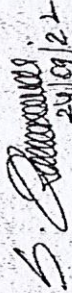
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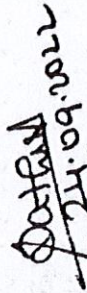


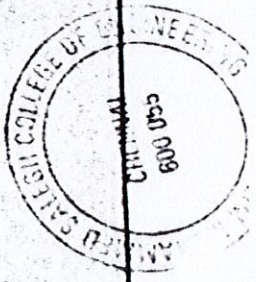
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Of Aalim Muhammed Salegh College of Engineering has participated
and successfully completed a Value Added Course on
WELDING AND CUTTING PROCESSES
conducted by Department of Mechanical Engineering
during 16/08/22 To 24/09/22 [30 HOURS]


Mr. P. M. M. Chandira
Assistant Professor


S. Ramkumar
Head
Dr. S. Ramkumar
Assistant Professor


Dr. S. Sathish
Professor




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