

## DVS 德國銲接協會 GSI/SLV 德國銲接國際研究院 IWE、IWT、IWS 國際銲接工程師、技師、技術士課程



### 德國原裝 線上、實作、理論 紮實課程、多份國際證書 精謹教材，著實操練，全面提升高階銲接人員水準

鋼結構是現代主要的建造工法之一，鋼結構的製造品質影響安全至巨，而銲接人員資格為不可缺少的重要基礎。DVS 德國銲接協會 GSI/SLV 德國銲接國際研究院與 TWS 台灣銲接協會、TWIA 風電協會、MIRDC 金屬中心合辦 IWE 國際銲接工程師訓練課程，透過DVS德國銲接協會核可台籍授課講師與實作教官授課，落實台灣在地人才以及師資的長期培養，為台灣銲接產業界累積動能與實力。

通過考試後可取得DVS 德國銲接協會 GSI/SLV 德國銲接國際研究院發證 IWE 國際銲接工程師資格證書，對於離岸風電與歐規銲接相關領域的需求將為台灣提供高階專業銲接人員訓練並全面提升整體銲接知識、技術與設計水平。

#### 目標學員

銲接相關產業從業人員，  
並具備工程師相關背景與經驗。

#### 內容

由DVS德國銲接協會核可，台灣專業領域講師授課  
銲接實作課程  
銲接理論 與 講堂課程  
NDT非破壞&DT破壞性檢測課程  
金相分析課程  
筆試 與 口試 (請參閱課程表)

#### 學員條件

IWE要求：  
工程相關科系大學以上學歷  
過去6年中擁有4年以上銲接工程師相關經歷

#### 學員報名

報名窗口：  
(線上報名) 財團法人金屬工業研究發展中心  
線上報名連結: <https://learning.mirc.org.tw>  
(紙本報名) 達寬服務商業有限公司、台灣銲接協會

#### 課程諮詢:

達寬服務商業有限公司  
地址: 桃園市春日路1629巷41號1樓  
電話: 03-332 2329 傳真: 03-336 3179

#### 通過考試核發三張國際證書

DVS德國銲接協會與GSI/SLV德國銲接國際研究院發證  
1、IWE 國際銲接工程師 證書 (國際)  
2、EWE 證書 (歐洲)  
3、SFI-DVS 證書 (德國)

#### 課程時間 與 上課地點

##### 報名時間:

2019年01月03日 至 2019年01月25日

##### 開課時間:

確定開課後即可開始PART-1 & PART-3 線上學習課程  
PART-2實作課程&PART-3講堂課程 2019年03月18日~04月26日  
PART-1考試 2019年03月04日、口試 2019年04月29日

##### 上課地點(預定):

高雄金屬中心(講堂)、高雄科技大學(實作)

#### 課程費用

IWE 課程: 培訓 210,000 / 人  
IWT 課程: 培訓 請電洽課程諮詢  
IWS 課程: 培訓 請電洽課程諮詢  
(費用含5%營業稅、不包含重考費用)

#### 主辦單位

DVS 德國銲接協會所屬 GSI/SLV DUISBURG德國銲接國際研究院杜伊斯堡 台灣代表處  
達寬服務商業有限公司

#### 協辦單位

台灣銲接協會  
財團法人金屬工業研究發展中心  
台灣風力發電產業協會  
台灣品仕國際有限公司

Schedule – IWE – Elearn –form  
Attendance period / Examination

Period in in teaching units (TU) and in minutes (min)	Part I E-learn Exam 03/04(—)
	Examination
2 TU / 100 min	Part I Examination (134 mins)
20 min	break
2 TU / 100 min	
40 min	break
2 TU / 100 min	
20 min	break
2 TU / 100 min	

## Presence Part II

Period in in teaching units (TU) and in minutes (min)	Day 1 03/18(一) IIW-Part II	Day 2 03/19(二) IIW-Part II	Day 3 03/20(三) IIW-Part II	Day 4 03/21(四) IIW-Part II	Day 5 03/22(五) IIW-Part II	Day 6 03/25(一) IIW-Part II	Day 7 03/26(二) IIW-Part II	Day 8 03/27(三) IIW-Part II
	PRACTICAL	PRACTICAL	PRACTICAL	PRACTICAL	PRACTICAL	PRACTICAL	PRACTICAL	PRACTICAL
<b>2 TU/ 100 min</b>	Work safety	Oxyacetylene welding	Manual metal-arc welding	MAG-welding	TIG-welding	Pulsed TIG Welding	Flux cored wire welding	Resistance welding
<i>20 min</i>	<i>coffee break</i>	<i>coffee break</i>	<i>coffee break</i>	<i>coffee break</i>	<i>coffee break</i>	<i>coffee break</i>	<i>coffee break</i>	<i>coffee break</i>
<b>2 TU/ 100 min</b>	Welding instruction	Oxyacetylene welding	Manual metal-arc welding	MAG-welding	TIG-welding	Pulsed TIG Welding	Flux cored wire welding	Resistance welding
<i>40 min</i>	<i>lunch</i>	<i>lunch</i>	<i>lunch</i>	<i>lunch</i>	<i>lunch</i>	<i>lunch</i>	<i>lunch</i>	<i>lunch</i>
<b>2 TU/ 100 min</b>	Introduction Part 2	Oxyacetylene welding	Manual metal-arc welding	MAG-welding	TIG-welding	Pulsed GMAW Welding	Submerged Arc welding	Soldering and Brazing
<i>20 min</i>		<i>coffee break</i>	<i>coffee break</i>	<i>coffee break</i>	<i>coffee break</i>	<i>coffee break</i>	<i>coffee break</i>	<i>coffee break</i>
<b>2 TU/100 min</b>		Oxyacetylene welding	Manual metal-arc welding	MAG-welding	TIG-welding	Pulsed GMAW Welding	Submerged Arc welding	Micro joining

### Presence Part III (Classroom)

Period in in teaching units (TU) and in minutes (min)	Day 9 03/28(四) IIW-Part III	Day 10 03/29(五) IIW-Part III	Day 11 04/01(一) IIW-Part III	Day 12 04/02(二) IIW-Part III	Day 13 04/03(三) IIW-Part III	Day 14 04/08(一) IIW-Part III	Day 15 04/09(二) IIW-Part III	Day 16 04/10(三) IIW-Part III	Day 17 04/11(四) IIW-Part III	Day 18 04/12(五) IIW-Part III
	Modul 1/ Lectures	Modul 1/ Lectures	Modul 1/ Lectures	Modul 1/ Lectures/ Exercise	Modul 2/ Lectures	Modul 1-2/ Lectures	Modul 2/ Lectures	Modul 2/ Lectures	Modul 2/ Lectures/ Practical exercise	Modul 2-3/ Lectures
2 TU / 100 min	1.4: The arc (arc welding)	1.8: MIG / MAG welding	1.12: Other welding processes	1.19-3: <b>Practical exercise</b> - Thermal Cutting	<b>2-9 Repetition (-1/-2): Structural (unalloyed) steels</b>	<b>Examination Modul 1</b>	2.15: Stainless and heat resistant steels	2.23-3: <b>Lecture/ Exercise</b> Destructive testing I	2.23-7: <b>Practical exercise</b> Metallographic examination	<b>3.4: Basics of weld design</b>
20 min	coffee break	coffee break	coffee break	coffee break	coffee break	coffee break	coffee break	coffee break	coffee break	coffee break
2 TU / 100 min	1.5: Power sources for arc welding	1.9: MMA welding	1.15: Fully mechanized processes	1.19-5: <b>Practical exercise</b> Solid State Laser	2.10: High strength steels	2.14-1: Introduction to corrosion I	2.17 / 18 / 19: Cast irons and steels / Copper and copper alloys / Nickel and nickel alloys	2.23-4: <b>Exercise</b> Destructive testing II	<b>Repetition Modul 2</b>	3.6-3: Design of welded structures with predominantly static loading III
40 min	lunch	lunch	lunch	lunch	lunch	lunch	lunch	lunch	lunch	lunch
2 TU / 100 min	1.7: TIG welding	1.10: Submerged arc welding	1.16 / 1.18: Brazing and soldering / Joining processes for ceramics and composites	<b>Repetition Modul 1</b>	2.12: Creep and creep resistant steels	2.14-2: Introduction to corrosion II	2.20: Aluminium and aluminium alloys	2.23-5 <b>Lecture/ Exercise</b> Metallographic examination	<b>Repetition Modul 2</b>	3.6-4: Design of welded structures with predominantly static loading IV
20 min	coffee break	coffee break	coffee break		coffee break	coffee break	coffee break	coffee break		coffee break
2 TU / 100 min	1.8: MIG / MAG welding	1.11: Resistance welding	1.17: Joining processes for plastics		2.12: Creep and creep resistant steels	2.15: Stainless and heat resistant steels	2.22: Joining dissimilar materials	2.23-6: <b>Exercise</b> Metallographic examination		3.7-1: Behaviour of welded structures under cyclic loading

Period in teaching units (TU) and in minutes (min)	Day 19 04/15(一) IIW-Part III	Day 20 04/16(二) IIW-Part III	Day 21 04/17(三) IIW-Part III	Day 22 04/18(四) IIW-Part III	Day 23 04/19(五) IIW-Part III	Day 24 04/22(一) IIW-Part III	Day 25 04/23(二) IIW-Part III	Day 26 04/24(三) IIW-Part III	Day 27 04/25(四) IIW-Part III	Day 28 04/26(五) IIW-Part III
	Modul 3/ Lectures	Modul 3/ Lectures	Modul 3/ Lectures	Modul 3-4/ Lectures	Modul 4/ Lectures/ Practical exercise	Modul 4/ Lectures	Modul 4/ Lectures/ Practical exercise	Modul 4/ Lectures	Modul 4/ Lectures/ Practical exercise	Modul 4/ Lectures
2 TU/ 100 min	<i>Examination Modul 2</i>	3.8-1;2;3;4: Design of cyclic loaded welded structures	3.11-1: Introduction to fracture mechanics I	<b>4.2-3: Quality control during manufacture III</b>	4.2-7: <b>Practical exercise</b> Quality control during manufacture VI (Practical exercise EN 287 I)	<i>Examination Modul 3</i>	4.8-1: Non-destructive testing I	4.8-5: Non-destructive testing III	4.8-9: <b>Practical exercise</b> Non-destructive testing (Radiographic testing II)	4.12-15: <b>Case Study</b> Welding in the shop and on site
20 min	coffee break	coffee break	coffee break	coffee break	coffee break	coffee break	coffee break	coffee break	coffee break	coffee break
2 TU / 100 min	3.7-2: Behaviour of welded structures under cyclic loading	3.9: Design of welded pressure equipment	3.11-1: Introduction to fracture mechanics I	4.2-4: Quality control during manufacture IV	4.2-8: <b>Practical exercise</b> Quality control during manufacture V (Practical exercise EN 287 II)	4.6-1: Measurement 1	4.8-3: Non-destructive testing II	4.8-6: Non-destructive testing IV	4.12-3/-4: <b>Case Study</b> Fabrication	4.12-16: <b>Case Study</b> Verification of suitability for welding
40 min	lunch	lunch	lunch	lunch	lunch	lunch	lunch	lunch	lunch	lunch
2 TU / 100 min	3.7-3: Behaviour of welded structures under cyclic loading	3.10-1: Design of aluminium alloy structures I	<b>Repetition Modul 3</b>	4.2-5: Quality control during manufacture V	4.4-1: Plant facilities, welding jigs and fixtures 1	4.6-2: Measurement 2	4.8-2: <b>Practical exercise</b> Non-destructive testing (MT/UT/PT I)	4.8-7: Non-destructive testing V	4.12-5/-6: <b>Case Study</b> Steam boiler pressure vessel	<b>Repetition Modul 4</b>
20 min	coffee break	coffee break	coffee break	coffee break	coffee break	coffee break	coffee break	coffee break	coffee break	coffee break
2 TU / 100 min	3.7-4: Behaviour of welded structures under cyclic loading	3.10-2: Design of aluminium alloy structures II	<b>Repetition Modul 3</b>	4.2-6: <b>Lecture/ Exercise</b> Quality control during manufacture V (Practical exercise EN ISO 15614-1)	4.4-2: Plant facilities, welding jigs and fixtures II	4.6-3: Measurement 3	4.8-4: <b>Practical exercise</b> Non-destructive testing (MT/UT/PT II)	4.8-8: <b>Practical exercise</b> Non-destructive testing (Radiographic testing I)	4.12-9/-10: <b>Case Study</b> Piping in a chemical plant	<b>Repetition Modul 4</b>  <b>Examination Modul 4 (60 mins extra after repetition)</b>

**Schedule – IWE – Elearn –form  
Attendance period / Examination**

Period in in teaching units (TU) and in minutes (min)	<b>Day 29 04/29(一)</b>		
	<b>Examination</b>		
<b>2 TU / 100 min</b>	<b>Oral examination</b>		
<i>20 min</i>	<i>break</i>		
<b>2 TU / 100 min</b>	<b>Oral examination</b>		
<i>40 min</i>	<i>break</i>		
<b>2 TU / 100 min</b>	<b>Oral examination</b>		
<i>20 min</i>	<i>break</i>		
<b>2 TU / 100 min</b>	<b>Oral examination</b>		