

Date	Unit	Topic	Type
<b>WEEK1: CSP Fundamentals, Sun and Mirrors</b>			
Monday	22.11.2010 DLR	U1 Welcome at DLR - Solar Research at DLR U2 enerMENA - Project and Course Overview U3 Solar Tower U4 Parabolic Trough / Fresnel	T T T T
Tuesday	23.11.2010 PSA	U5 Welcome at PSA + Solar Furnace / Desalination / Chemistry U6 Dish-Stirling U7 SiteVisit PSA1: Safety at PSA / Tower/Overview U8 SiteVisit PSA2: Trough / Dishes / Desal	T T P P
Wednesday	24.11.2010 DLR	U9 Desertec U10 Properties of Solar Radiation U11 Measurement of Solar Radiation U12 Solar Resource Assessment and Site Analysis	T T T T
Thursday	25.11.2010 DLR	U13 Fundamentals of Optical Performance (Raytracing, Rabl-Model) U14 Potential for Optimization 1 U15 Potential for Optimization 2 U16 Overview of Measurement Techniques (DLR/CSPS)	T T T T
Friday	26.11.2010 PSA	U17 Sun & Mirror Properties U18 Introduction Mobile Measurement U19 Presentation Assignment U20 Commissioning Mobile Measurement Lab (part2)	P T/P T/P T/P
<b>WEEK2: Meteorological Measurements // Optimization: Photogrammetry (PG) // Deflectometric Measurements (Defl)</b>			
Monday	29.11.2010 PSA	U21 Measurement of Global Horizontal Irradiance with Pyranometers U22 Measurement of Direct Normal & Diffuse Horizontal Irradiance with Solar Trackers U23 Irradiance Measurements with Rotating Shadowband Pyranometers U24 Quality Control of Meteorological Data	P P P P
Tuesday	30.11.2010 PSA	U25 PG: Introduction Photogrammetry and Workflow U26 PG: Introduction Mobile Measurement Lab 2 (PG) U27 PG: Object Preparation and Image Acquisition U28 PG: Photogrammetric Evaluation using AICON DPA Pro	T P P P
Wednesday	01.12.2010 PSA	U29 PG: Photogrammetric Evaluation of a Parabolic Trough Mirror Panel U30 PG: EXERCISE, PHOTOGRAMMETRIC EVALUATION OF A PARABOLIC TROUGH MIRROR PANEL U31 PG: Shape Accuracy Analysis of a Parabolic Trough Mirror Panel using PG Data U32 PG: Photogrammetric Deformation Analysis of a Parabolic Trough Panel	T P P P
Thursday	02.12.2010 PSA	U33 PG: Introduction to Photogrammetric Evaluation of Parabolic Trough Collectors U34 PG: Exercise, Photogrammetric Evaluation of Parabolic Trough Collectors U35 PG: Evaluation of Photogrammetric Data from a Parabolic Trough U36 Measurement of Mechanical Properties of Parabolic Trough Collectors	P T P P
Friday	03.12.2010 PSA	U37 Defl: Introduction Deflectometry U38 Defl: Deflectometric Measurement U39 Defl: Deflectometric Measurement U40 Defl: Evaluation & Interpretation of Deflectometric Measurement	T T P T
<b>WEEK3: Optimization: CSP Project Planning</b>			
Monday	06.12.2010 Murcia	E Visit Solar Power Plant Novatec E Visit Solar Power Plant Novatec E Visit Solar Power Plant Novatec E Visit Solar Power Plant Novatec	E E E E
Tuesday	07.12.2010 DLR	U53 Project Planning: Project Types U54 Project Planning: Project Types U55 General Project Implementation U56 General Project Implementation and Current Projects	T T T T
Wednesday	08.12.2010 DLR	U57 Yield Analysis U58 Introduction to Greenius U59 Greenius 1, Example parabolic trough plant U60 Greenius 2, Solar field sizing	T T P P
Thursday	09.12.2010 DLR	U61 Greenius 3, Solar tower plant and technology comparison U62 Greenius 4, Acquisition and preparation of meteorological data U63 Greenius 5, Load curves and power block performance U64 Introduction to SAM	P P P P
Friday	10.12.2010 PSA	U41 Introduction Mobile Measurement Lab 3 (Thermal) U42 Calculation of Efficiency; Different Definitions for Efficiency U43 Introduction to Sensors used for Thermal Measurements U44 Necessary Conditions vor Eta-Measurement; Error Analysis	T T T T
<b>WEEK4: Optimization: Thermal Measurements // Excursion Site Visits (E)</b>			
Monday	13.12.2010 PSA	U45 Installation of Temperature Sensors U46 Installation of Mass Flow Meter U47 Installation of Sun Irradiation (DNI) Sensor U48 Data Acquisition	P P P P
Tuesday	14.12.2010 PSA	U49 Reflectivity Measurement U50 Data Evaluation & Interpretation U51 Data and Uncertainty Analysis U52 Parameter Identification and Discussion, then travel to Seville	P T T/P T/P
Wednesday	15.12.2010 Seville	E Visit Plataforma Solar de Sanlúcar (Abengoa) E Visit Plataforma Solar de Sanlúcar (Abengoa) E Visit Solar Power Plant Gemasol E Visit Solar Power Plant Gemasol	E E E E
Thursday	16.12.2010 Guadix	E Travel to Guadix E Travel to Guadix E Visit Solar Power Plant Andasol-3 E Visit Solar Power Plant Andasol-3, then travel to Almería	E E E E
Friday	17.12.2010 DLR	U65 Definition Assignment and Outlook eM-CB-02 / eM-CB-03 U66 Definition Assignment and Outlook eM-CB-02 / eM-CB-03 Closure	T T T