

# «ETTORE MAJORANA» FOUNDATION AND CENTRE FOR SCIENTIFIC CULTURE

TO PAY A PERMANENT TRIBUTE TO ARCHIMEDES AND GALILEO GALILEI, FOUNDERS OF MODERN SCIENCE  
AND TO ENRICO FERMI, THE "ITALIAN NAVIGATOR", FATHER OF THE WEAK FORCES



## SUMMARY OF THE 2022 COURSES — ERICE



All Courses are sponsored by the World Federation of Scientists (WFS), the Sicilian Regional Government (ERS), the Italian Ministry of Education, University and Scientific Research and the Galileo Galilei Foundation (GGF). Some of the Courses are under the sponsorship of the Italian Ministry of Foreign Affairs, the Italian Ministry of Health, the North Atlantic Treaty Organization (NATO), the American National Science Foundation (NSF), the Italian National Research Council (CNR), the Weizmann Institute of Science, the European Physical Society (EPS), the Italian National Institute for Nuclear Physics (INFN), the Enrico Fermi Historical Museum of Physics and Study and Research Centre, the World Wildlife Fund (WWF), the Commission of the European Communities (CEC), some of the main Italian and foreign Universities and Research Centres, and the World Laboratory

- INTERNATIONAL SCHOOL OF EPIDEMIOLOGY AND PREVENTIVE MEDICINE «GIUSEPPE D'ALESSANDRO»  
Directors: G.M. FARA – G. GIAMMANCO – C. SIGNORELLI – M. SZKLO – F. VITALE  
58th Course: *La salute dei migranti: Una sfida di equità per il sistema sanitario pubblico*  
Director: M. MARCECA  
28 March – 2 April 2022
- GIORNATE INTERNAZIONALI DI STUDI SULL'AREA ELIMA «GIUSEPPE NENCI»  
*None Giornate Internazionali di Studi sull'Area Elima e la Sicilia Occidentale nel contesto Mediterraneo: Il mondo intorno agli Elimi*  
Directors: C. AMPOLO – R. GIGLIO – A. MAGNETTO  
7 – 8 April 2022
- INTERNATIONAL SCHOOL OF CARDIAC SURGERY  
Director: U.F. TESLER  
8th Course: *Evolving strategies in the care of the complex cardiovascular surgical patient*  
Directors: G. GEROSA – M. PILATO  
9 – 13 April 2022
- INTERNATIONAL SCHOOL OF SOLID STATE PHYSICS  
Director: G. BENEDEK  
77th Workshop: *Quantum fluid clusters*  
Directors: G.E. DOUBERLY – A.F. VILESOV  
18 – 23 April 2022
- INTERNATIONAL SCHOOL OF ETHOLOGY «DANILO MAINARDI»  
Directors: P. PALANZA – S. PARMIGIANI  
48th Course: *Darwin in medicine: Why evolution is relevant for research and medical practice*  
Directors: M. BRUNE – P. PALANZA – S. PARMIGIANI  
19 – 23 April 2022
- INTERNATIONAL SCHOOL OF NONEQUILIBRIUM PHENOMENA  
Directors: A. LANZARA – M.G. PALMA – B. SPAGNOLO  
1st Course: *If noise from condensed matter physics to quantum technologies*  
Directors: A.A. BALANDIN – Y. GALPERIN – P. HAKONEN – E. PALADINO – A. USTINOV  
24 – 30 April 2022
- INTERNATIONAL SCHOOL ON TREASURES OF ART AND SCIENCE  
Director: L. ZICHICHI  
11th Seminar  
Director: L. ZICHICHI  
29 April – 1 May 2022

- INTERNATIONAL SCHOOL OF ETHOLOGY «DANILO MAINARDI»  
Directors: P. PALANZA – S. PARMIGIANI  
49th Course: *Mens sana in corpore sano: Psychobiological effects of physical activity*  
Directors: D. CAPOROSSI – C.-C. COSTANTINO – G.H. KHUN – S. PARMIGIANI – D. PONZI – A. SALE  
1 – 4 May 2022
- INTERNATIONAL SCHOOL OF BIOPHYSICS «ANTONIO BORSELLINO»  
46th Course: *Biophysics of channels and transporters*  
Directors: A. ACCARDI – S. PLESS – P. TAMMARO  
5 – 11 May 2022
- INTERNATIONAL SCHOOL OF MATHEMATICS «GUIDO STAMPACCHIA»  
Directors: F. GIANNESSI – now G. BUTTAZZO – M. THÉRA  
72nd Course: *Stochastic methods in game theory*  
Directors: J. FLESCHE – P. MERTIKOPOULOS – M. SCARSINI  
12 – 18 May 2022
- INTERNATIONAL SCHOOL OF MATHEMATICS «GUIDO STAMPACCHIA»  
Directors: F. GIANNESSI – now G. BUTTAZZO – M. THÉRA  
73rd Workshop: *Robustness and resilience in stochastic optimization and statistical learning: Mathematical foundations*  
Directors: L. EL GHAOUI – A. JOFRE – F. MAGGIONI – J.O. ROYSET  
19 – 25 May 2022
- INTERNATIONAL SCHOOL OF CARDIOLOGY  
Directors: A. BRANZI – F. FEDELE – S. NOVO  
22nd Workshop: *Cardio-oncology*  
Directors: S. CARERI – G. NOVO  
25 – 28 May 2022
- INTERNATIONAL SCHOOL OF NEUROSCIENCES «SIR JOHN ECCLES»  
Directors: P.F. FERRARI – G. RIZZOLATTI  
11th Course: *Oxytocin and vasopressin. From brain modulation to epigenetic regulation and clinical applications*  
Directors: P.F. FERRARI – L. YOUNG  
28 May – 2 June 2022
- INTERNATIONAL SCHOOL OF CRYSTALLOGRAPHY  
Director: T.L. BLUNDELL  
56th Course: *High pressure crystallography*  
Directors: K. DZIUBEK – S. DEEMYAD – H. MAYNARD-CASELY  
3 – 11 June 2022
- INTERNATIONAL SCHOOL OF CRYSTALLOGRAPHY  
Director: T.L. BLUNDELL  
57th Course: *Diffuse scattering: The crystallography of dynamics, defects, and disorder*  
Directors: N. ANDO – A. GOODWIN  
3 – 11 June 2022
- HYDROGEN SYMPOSIUM  
Chairmen: C. GALBIATI – S.F. ZICHICHI  
11 – 15 June 2022
- INTERNATIONAL SCHOOL OF SUBNUCLEAR PHYSICS  
Directors: A. ZICHICHI – A. ZOCCOLI  
58th Course: *Gravity and matter in the subnuclear world*  
Directors: G. 't HOOFT – A. ZOCCOLI  
15 – 24 June 2022
- INTERNATIONAL SCHOOL OF STATISTICAL PHYSICS  
Directors: P. HÄNGGI – F. MARCHESONI  
21st Course: *Artificial and intelligent living matter*  
Directors: A. DOOSTMOHAMMADI – M. MAZZA – T. SHENDRUK – H. STARK  
25 June – 1 July 2022
- INTERNATIONAL SCHOOL OF SOLID STATE PHYSICS  
Director: G. BENEDEK  
78th Course: *Fundamental mechanisms to drive progresses in organic, and large-area bioelectronics*  
Directors: F. BISCARINI – R. OWENS – A. SALLEO – L. TORSI  
3 – 9 July 2022

- INTERNATIONAL SCHOOL OF SOLID STATE PHYSICS  
Director: G. BENEDEK  
79th Course: *Structured materials and structured light*  
Directors: F. CAPASSO – M.S. VITIELLO  
3 – 9 July 2022
- INTERNATIONAL SCHOOL OF SOLID STATE PHYSICS  
Director: G. BENEDEK  
80th Workshop: *Epioptics & Xenos*  
Directors: A. CRICENTI – A. MOLLE  
3 – 9 July 2022
- INTERNATIONAL SCHOOL OF MATERIALS FOR SUSTAINABLE DEVELOPMENT AND ENERGY  
Director: A. TERRASI  
2nd Course: *Macromolecular science for advanced and sustainable materials*  
Directors: A. ANASTASAKI – S.C. CARROCCIO – B. SUMERLIN  
10 – 14 July 2022
- INTERNATIONAL SCHOOL OF BIOLOGICAL MAGNETIC RESONANCE  
Director: J.D. PUGLISI  
18th Course: *Frontiers in biophysics and structural biology*  
Directors: J.D. PUGLISI – E. VIANI PUGLISI  
12 – 18 July 2022
- INTERNATIONAL SCHOOL OF NANOMEDICINE  
Directors: M. FERRARI – M.E. MASSERINI  
5th Workshop: *Advanced nano- and micro-structured materials for medical applications*  
Directors: F. RE – L. RUSSO  
20 – 25 July 2022
- INTERNATIONAL SCHOOL OF CARDIOLOGY  
Directors: A. BRANZI – F. FEDELE – S. NOVO  
23rd Workshop: *Advances in cardiovascular imaging and therapy*  
Directors: F. FEDELE – S. NOVO  
20 – 27 July 2022
- INTERNATIONAL SCHOOL OF NONEQUILIBRIUM PHENOMENA  
Directors: A. LANZARA – M.G. PALMA – B. SPAGNOLO  
2nd Course: *Understanding the recurrence of rare atmospheric events: A dynamical systems approach*  
Director: D. FARANDA  
28 July – 1 August 2022
- INTERNATIONAL SCHOOL OF COSMIC RAY ASTROPHYSICS «MAURICE M. SHAPIRO»  
22nd Course: *From cosmic particles to gravitational waves: Now and to come*  
Directors: J.R. HÖRANDEL – T.S. STANEV – J.P. WEFEL  
30 July – 7 August 2022
- INTERNATIONAL SEMINARS ON PLANETARY EMERGENCIES  
Chairman: A. ZICHICHI  
54th Session – Co-Chairman: T.D. LEE  
18 – 24 August 2022
- INTERNATIONAL SCHOOL OF SOLID STATE PHYSICS  
Director: G. BENEDEK  
81st Course: *Dynamics of electrons in atomic and molecular nanoclusters*  
Directors: K. HANSEN – V.V. KRESIN  
25 – 31 August 2022
- INTERNATIONAL SCHOOL OF COMPLEXITY  
Director: A. ZICHICHI – Co-Directors: G. BENEDEK – A. RAPISARDA – C. TSALLIS  
17th Course: *Stochastic forecasting of complex systems*  
Directors: L. DE ARCANGELIS – R.N. MANTEGNA – A. RAPISARDA  
25 – 31 August 2022
- INTERNATIONAL SCHOOL OF MATHEMATICS «GUIDO STAMPACCHIA»  
Directors: F. GIANNESI – now G. BUTTAZZO – M. THÉRA  
74th Course: *Topological methods in mathematical physics*  
Director: R.L. RICCA  
1 – 7 September 2022

- INTERNATIONAL SCHOOL OF NEUROSCIENCES «SIR JOHN ECCLES»  
Directors: P.F. FERRARI – G. RIZZOLATTI  
12nd Course: *Comparative neurobiology of higher cognitive*  
Directors: L. BONINI – A. GENOVESIO – P.F. FERRARI  
9 – 14 September 2022
- INTERNATIONAL SCHOOL OF NUCLEAR PHYSICS  
Directors: A. FAESSLER – now M. BUBALLA – C. FISCHER  
43rd Course: *Neutrinos in cosmology, in astro, particle and nuclear physics*  
Directors: M. BUBALLA – C. FISCHER  
16 – 22 September 2022
- MEETING ON ANAESTHESIA, ANALGESIA, RESUSCITATION, AND INTENSIVE CARE (SIAARTI)  
Director: A. GIARRATANO  
23 – 24 September 2022
- INTERNATIONAL SCHOOL ON MASS SPECTROMETRY  
Director: G. GIORGI  
1st Course: *High resolution mass spectrometry: Fundamentals, advances & applications*  
Director: G. GIORGI  
25 – 30 September 2022
- INTERNATIONAL SCHOOL OF STATISTICAL PHYSICS  
Directors: P. HÄNGGI – F. MARCHESONI  
22nd Course: *Exploring and quantifying rough free energy landscapes*  
Directors: M. PARRINELLO – G.A. VOTH  
25 – 30 September 2022
- INTERNATIONAL SCHOOL OF IUS COMMUNE  
Directors: M. BELLOMO – O. CONDORELLI – W. DECOCK – K. PENNINGTON  
41st Course: *Ethics, public offices, and the ethical conduct of office holders*  
Directors: O. CONDORELLI – H. REIMITZ  
2 – 6 October 2022
- INTERNATIONAL SCHOOL OF PHARMACOLOGY «GIAMPAOLO VELO»  
Directors: M. LINDQUIST – P. MINUZ – U. MORETTI  
90th Workshop: *Food supplements vigilance systems in a public health perspective: The European context*  
Directors: F. MENNITI-IPPOLITO – U. MORETTI – G. VO VAN REGNAULT  
5 – 9 October 2022
- INTERNATIONAL SCHOOL OF QUANTUM ELECTRONICS  
Directors: A.N. CHESTER – D.S. WIERSMA  
66th Course: *The foremost photonics 2022*  
Directors: C. TONINELLI – P.D. GARCIA – M. CENTINI  
10 – 14 October 2022
- INTERNATIONAL SCHOOL OF PHARMACOLOGY «GIAMPAOLO VELO»  
Directors: M. LINDQUIST – P. MINUZ – U. MORETTI  
91st Workshop: *New strategies in the prevention of cardiovascular and metabolic disorders*  
Directors: P. MINUZ – C. PATRONO  
15 – 19 October 2022
- INTERNATIONAL SCHOOL OF SOLID STATE PHYSICS  
Director: G. BENEDEK  
82nd Workshop: *Unconventional computing: Materials science, informatics, hardware, software*  
Directors: A. ADAMATZKY – M. FANCIULLI – W.G. VAN DER WIEL  
20 – 26 October 2022
- INTERNATIONAL WORKSHOP ON PHYSICAL COMPUTING  
Directors: A. CALÀ LESINA – W. PERNICE  
29 October – 6 November 2022
- INTERNATIONAL SCHOOL OF DERMATOLOGY  
Directors: G. BURG – B. GIANNOTTI  
13rd Course: *Cutaneous oncology*  
Directors: N. PIMPINELLI – L. ZICHICHI  
9 – 13 November 2022

- INTERNATIONAL SCHOOL OF EPIDEMIOLOGY AND PREVENTIVE MEDICINE «GIUSEPPE D'ALESSANDRO»  
Directors: G.M. FARA – G. GIAMMANCO – C. SIGNORELLI – M. SZKLO – F. VITALE  
59th Course: *Design and management the hospital and the territorial healthcare network of the future*  
Directors: S. CAPOLOGO – A. CASUCCIO – D. D'ALESSANDRO – M. FERRANTE  
14 – 18 November 2022
  
- INFN ELOISATRON PROJECT  
Director: A. ZICHICHI  
66th Workshop: *New gas mixtures for RPC and MRPC detectors*  
Directors: M. ABBRESCIA – M. GARBINI – R. NANIA  
20 – 23 November 2022
  
- INTERNATIONAL SCHOOL OF BIOPHYSICS «A. BORSELLINO»  
47th Course: *Neuroepidemiology: Methods and clinical applications*  
Directors: M. D'AMELIO – A. ELBAZ – T. KURTH – G. LOGROSCINO – P.M. PREUX – M. PUGLIATTI – P. RAGONESE – W. ROCCA – G. SAVETTIERI  
23 – 28 November 2022
  
- INTERNATIONAL SCHOOL OF BRAIN CELLS AND CIRCUITS «CAMILLO GOLGI»  
Directors: E. D'ANGELO – C. GANDINI WHEELER-KINGSHOTT  
7th Course: *Modeling the brain*  
Directors: E. D'ANGELO – C. GANDINI WHEELER-KINGSHOTT – V. JIRSA  
29 November – 3 December 2022
  
- INTERNATIONAL SCHOOL OF WATER AND WATER SYSTEM  
Directors: R. CAR – F. MALLAMACE – L.G.M. PETTERSON  
4th Course: *Advances in functional materials: Fundamentals, technology, sustainable energy production and the water role*  
Directors: C. AMPELLI – D. MALLAMACE – R. PASTORE  
5 – 10 December 2022

**More information about the activities of the Ettore Majorana Foundation  
can be found on the WWW at the following address:  
<http://www.ccsem.infn.it>**