

Corso ECM

CERTIFICAZIONE “ADVANCED SPORT SCIENCE”

dal 10 al 12 Aprile 2026

Via Po, 2, 20871 Torri Bianche, Vimercate (MB)

Upgrade Training Center

PROGRAMMA

Giorno 1

8:30 - 9:00 Registrazione partecipanti e introduzione

- 9:00 – 10:30 (1h30) – Modello prestativo e richieste fisiologiche e meccaniche del calcio (*Teoria*)
- 10.30 - 10.45 Coffee Break
- 10:45 – 12:15 (1h30) – Periodizzazione del carico: esempi pratici con partite ogni 3-7 giorni (*Teoria + Discussione*)
- 12:15 – 13:15 (1h) – Analisi di casi e costruzione di microcicli (*Pratica*)
- 13:15 - 14:15 Pausa Pranzo

- 14:15 – 15:00 (0h45) – Test aerobici (Mognoni), anaerobici e di potenza: principi e protocolli (*Teoria*)
- 15:00 – 17:45 (2h45) – Pratica in campo: esecuzione test di potenza, aerobici e anaerobici con raccolta dati (frequenza cardiaca, lattato, GPS) (*Pratica*)
- 17:45 - 18:00 Coffee Break
- 18:00 – 18:30 (0h30) – Analisi e interpretazione dei risultati dei test (*Pratica*)

Giorno 2

- 9:00 – 10:30 (1h30) – Fattori di rischio e meccanismi d’infortunio (*Teoria*)
- 10:30 – 12:00 (1h30) – Analisi dell’incidenza e strategie di prevenzione (*Teoria*)
- 12:00 – 13:00 (1h) – Costruzione di un piano preventivo (*Pratica/Discussione*)

- 13:00 - 14:00 Pausa Pranzo

- 14:00 – 15:00 (1h) – Carico interno (frequenza cardiaca) ed esterno (GPS): principi e limiti (*Teoria*)
- 15:00 – 16:00 (1h) – Esempi di applicazione nello sport professionistico (*Teoria*)
- 16:00 – 18:00 (2h) – Creazione ed esecuzione di allenamenti con monitoraggio in tempo reale e aggiustamento in base agli obiettivi (*Pratica*)

Giorno 3

- 9:00 – 10:30 (1h30) – Analisi dell’allenamento precedente: obiettivi raggiunti e relazione tra carico interno ed esterno (*Pratica/Discussione*)
- 10:30 – 13:00 (2h30) – Principi di ricerca: risk of bias, qualità del reporting, statistica di base e interpretazione dei risultati (*Teoria*)
- 13:00 - 14:00 Pausa Pranzo

- 14:00 – 15:30 (1h30) – Metodi di monitoraggio della fatica: questionari, test neuromuscolari, sonno, idratazione, biomarcatori (*Teoria*)

- **15:30 – 17:00 (1h30)** – Strategie di recupero: sonno, alimentazione, idratazione, crioterapia, acqua calda/fredda, camera iperbarica (*Teoria*)
- **17:00 – 18:00 (1h)** – Caso studio e applicazione pratica (*Pratica*)
- **18-18.30** Test ECM

DOCENTE

Francesco Aiello, Laureato in scienze motorie

RAZIONALE

Il corso si propone di fornire conoscenze avanzate e competenze operative nell'ambito della **preparazione atletica, valutazione della performance, prevenzione degli infortuni e monitoraggio del carico** negli atleti, in particolare degli sport di squadra. L'obiettivo principale è formare professionisti capaci di integrare i principi scientifici dell'allenamento con le esigenze pratiche del contesto sportivo d'élite e dilettantistico.

Il percorso didattico è strutturato per sviluppare una comprensione completa dei processi che influenzano la performance sportiva, dalla pianificazione del carico alla valutazione dello stato di forma dell'atleta, fino alle strategie di prevenzione e recupero. Particolare attenzione è rivolta alla capacità di interpretare i dati derivanti da test fisiologici e biomeccanici, strumenti di monitoraggio (frequenza cardiaca, GPS, questionari, biomarcatori) e tecniche di valutazione della fatica, al fine di supportare decisioni informate nella gestione dell'allenamento e della stagione agonistica.

La prima parte del corso si concentra sulla **modellizzazione della prestazione sportiva** e sulla comprensione delle **richieste fisiologiche e meccaniche** del calcio, analizzando metodologie e strategie di periodizzazione del carico in funzione dei calendari competitivi. Successivamente, i partecipanti acquisiranno competenze nella **valutazione funzionale dell'atleta**, apprendendo protocolli standardizzati per test aerobici, anaerobici e di potenza, e imparando a raccogliere e interpretare dati oggettivi in contesti di campo.

La seconda giornata affronta in modo approfondito i **principi di prevenzione degli infortuni**, dall'analisi dei fattori di rischio alla progettazione di interventi mirati, e introduce le basi del **monitoraggio del carico interno ed esterno**, discutendo criticamente le potenzialità e i limiti delle tecnologie di supporto. L'approccio didattico prevede l'integrazione tra teoria e pratica attraverso attività applicative sul campo, in cui gli studenti progettano e conducono sessioni di allenamento monitorate in tempo reale.

L'ultima parte del corso è dedicata all'**analisi della risposta dell'atleta all'allenamento**, alla comprensione dei **principi di ricerca scientifica** e alla capacità di leggere e interpretare evidenze scientifiche a supporto delle decisioni. Inoltre, vengono affrontati i metodi più aggiornati per il **monitoraggio dello stato di fatica** e le principali **strategie di recupero**, essenziali per ottimizzare la prestazione e ridurre il rischio di infortunio.

Grazie a un approccio integrato e multidisciplinare, il corso consente ai partecipanti di acquisire strumenti pratici e teorici per operare efficacemente nei contesti sportivi moderni, dove l'interazione tra scienza, tecnologia e pratica quotidiana rappresenta un elemento imprescindibile per il successo dell'atleta e della squadra.

TARGET

Fisioterapisti



RESPONSABILE SCIENTIFICO

Francesco Aiello, Laureato in scienze motorie

PROVIDER

EDUMED SRL

Id provider 6896

Via della Badia, 18 - 25127, Brescia

tel. +39 333 119 8827

info@edumed.it

www.edumed.it

SEGRETERIA ORGANIZZATIVA

Riccardo Villa

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FRANCESCO AIELLO

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EXPERIENCE

LEAD SPORT SCIENTIST

JUL 24 - CURRENT | Olympique de Marseille | Marseille, FR

- Support the planification and delivery of training sessions
 - Responsible for the testing and monitoring of first team players
 - Coordination of the collection, analysis, and reporting of all the Performance and Medical data (rehab monitoring, player availability, injuries, S&C delivery, etc) for the first team and the Academy
 - Supporting the Head of Performance in the management and development of the Performance and Medicine Department, including the development of a €55M five-year plan
 - Achieved 2nd position in Ligue 1 and Champions League qualification
-

SENIOR LECTURER IN SPORTS COACHING SCIENCE

UCFB Manchester | Manchester, UK

SEP 22 – JUL 24

- Module leader and lecturer for undergraduate modules
 - Research and knowledge exchange activities
 - Supervise undergraduate students in their final projects
 - Management of all admin tasks related to module leadership and dissertations in alignment with university and industry regulators policies
-

CONSULTANT ON RESEARCH METHODS AND DATA ANALYTICS IN SPORT

Setanta College | Remote

DEC 23 - CURRENT

- Review courses for Master's Degrees in Sport Medicine and Sport Science
 - Design courses on Research Methods and Data Analysis
 - Supervise postgraduate students in their final projects
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SPORT SCIENCE CONSULTANT

Self-employed | Remote

SEP 22 – CURRENT

Support football teams, federations, and companies working in education by:

- Leading research projects
 - Supporting the development of Sport Science departments
 - Developing and delivering online educational materials (webinar, infographics, workshops, lectures)
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GRADUATE TEACHING ASSISTANT

Edinburgh Napier University | Edinburgh, UK

SEP 21 – AUG 22

Supported teaching, delivered lectures, tutorials, and demonstrations in the following modules:

- Introduction to research methods in football
 - Physiological Factors Affecting Sporting Performance
 - Assessment and Conditioning for Performance
-

R&D AND FIRST TEAM SPORT SCIENCE ASSISTANT

Arsenal FC | London Colney, UK

OCT 19 – SEP 22

- Testing and monitoring (e.g., GPS, HR, questionnaires, physical tests)
 - Data analysis and reporting
 - Provision of Sport Science support for athletes and staff
 - Development of the internal information hub
 - Won FA Cup 2020
-

U19 SPORT SCIENTIST

F.C. Inter Milan | Milan, Italy

JUL 18 – JUN 19

- Testing and monitoring (e.g., GPS, HR, questionnaires, physical tests)
 - Data analysis and reporting
 - Management of training and match operations (e.g., warm-up, S&C sessions, post-match training)
 - Rehab coach
 - Achieved Super cup and Championship final
-

FIRST TEAM SPORT SCIENTIST

A.C. Monza | Monza, Italy

JUL 17 – JUN 18

- Testing and monitoring (e.g., GPS, HR, questionnaires, physical tests)
 - Data analysis and reporting
 - Management of training and match operations (e.g., warm-up, S&C sessions, post-match training)
 - Achieved Play-offs
-

PERFORMANCE DATA ANALYST

Iterpro ltd | Milan, Italy

SEP 17 – JUN 18

- Development of dashboards and data analytics for the Data Management System
 - Research in Sports Medicine and Performance for the development of new features
 - Customer support and consultancy for professional sport organizations
-

FIRST TEAM PERFORMANCE COACH

G.S.D. La Spezia | Milan, Italy

AUG 16 – JUN 17

- Management of training and match operations (e.g., warm-up, S&C sessions, post-match training)
 - Lead of the Academy Performance Department
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ACADEMY SPORT SCIENTIST INTERN

A.C. Milan | Milan, Italy

SEP 15 – SEP 16

- Testing and monitoring (e.g., GPS, HR, questionnaires, physical tests)
 - Support during training and rehab sessions
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EDUCATION

PHD IN APPLIED SCIENCE

Edinburgh Napier University

Oct 19 | Sep 22

Thesis entitled: Analysis of circumstances leading to injuries in elite football players

MASTER OF SCIENCE IN SPORT SCIENCE AND PERFORMANCE

University of Milan

Oct 16 | Sep 18

Graduated with 110/110 cum laude

BACHELOR OF SCIENCE IN SPORT SCIENCE

Catholic university of Milan

Oct 13 | Sep 16

Graduated with 109/110

OTHER RELEVANT CERTIFICATIONS

- Professional Strength & Conditioning Coach, Italian S&C Society, October 2023
 - FHEA, Higher Education Academy, May 2023
 - Exos Performance Specialist, EXOS (online), Sep 2021
 - Casual Diagrams in Epidemiology, Harvard University (online), Mar 2021
 - Statistical Analysis with R, Imperial College London (online), Jan 2021
 - Improving your statistical inferences, Eindhoven University of Technology, June 2020
 - UEFA B Coaching License, Italian Football Federation (FIGC), Jun 2019
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PUBLICATIONS

- Peek, K., **Aiello F.**, Avery L., Gardner, T., Rutherford, H., Massey, A., Georgieva, J., Andersen, T.E., Dahlen, S., Serner, A. *Characteristics of potential head injury situations at the FIFA World Cup Qatar 2022*. Science and Medicine in Football (2024). <https://doi.org/10.1080/24733938.2024.2409689>
- Aiello, F.**, Avery, L., Gardner, T., Rutherford, H., McCall, A., Impellizzeri, F.M., Peek, K., Della Villa, F., Massey, A., Serner, A. *Broadening our understanding of injury mechanisms to include at-risk situations: an overview of potential injuries at the FIFA men's World Cup Qatar 2022*. Science and Medicine in Football (2024). doi.org/10.1080/24733938.2024.2372304
- Aiello, F.** *Development of a standardised method for the analysis of mechanisms and circumstances of injury in football (PhD Academy Awards)*. British Journal of Sports Medicine (2023). doi.org/10.1136/bjsports-2023-107644
- Aiello, F.**, Di Claudio, C., Fanchini, M., McCall, A., Brown, S.J., Sharp, C., Impellizzeri, F.M. *Video and GPS analysis of activities leading to hamstring injuries in Italian elite football players*. Journal of Science and Medicine in Sport (2023). doi.org/10.1016/j.jsams.2023.07.007
- Aiello, F.**, McCall, A., Brown S.J., Serner A., Fortington, L., Huurman, S., Lewis, S., Nagao, M., O'Brien, J., Panossian, A., Pruna, R., Passos Ramos, G., Whalan, M., Impellizzeri, F.M. *Development of a standardised system to classify injury inciting circumstances in football: the Football Injury Inciting Circumstances Classification System*. Sports Med (2023). doi.org/10.1007/s40279-023-01857-6
- Aiello, F.**, Impellizzeri, F.M., Brown, S.J. et al. *Injury-Inciting Activities in Male and Female Football Players: A Systematic Review*. Sports Med (2023). doi.org/10.1007/s40279-022-01753-5
- Pavesi M., **Aiello F.** *Stile IPD Futsal* (ebook). Monselice: PD, Youcoach, 2017
- Aiello, F.**, Dunlop, G., Nimphius, S., McCall, A., Impellizzeri, F.M., Kryger, K.O. *Strength and conditioning research in women's football: a Scoping Review*. To be submitted to Science and Medicine in Football
- Aiello, F.**, Impellizzeri, F. M. Avery, L., Gardner, T., Rutherford, H., Serner, A. *Inter-rater and intra-rater reliability of the Football Injury Inciting Circumstances Classification System (FIICCS)*. To be submitted to Sports Medicine
- McCall, A., Kryger, K.O., Serner, A., **Aiello, F.**, Ivarsson, A., Massey, A., Impellizzeri, F.M. *FIFA research agenda in women's football*. To be submitted to Science and Medicine in Football
- Galan-Lopez, N., Markey, K., **Aiello, F.**, Carter, S., Brade, C., Spence, A., McKay, A., Mountjoy, M., Anderson, T., Adams, W.M., Christmas, B.C.R., Henderson, M.J., Taylor, L. *Sports science and medicine in elite female athletes: a scoping review to establish and identify future research priorities*. To be submitted to International Journal of Sports Physiology and Performance
- McCall, A., Impellizzeri, F.M., Hecksteden, A., Lolli, L., Ivarsson, A., **Aiello, F.**, Senn, S. *Implementation of n-of-1 protocol for the assessment of recovery strategies in football*. To be submitted to International Journal of Sports Physiology and Performance
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SKILLS

IT skills: I have strong IT skills. I can use Microsoft Office and Project Management tools to collaborate with colleagues on shared documents, store and share data following GDPR, prepare interactive presentations and teaching material, and facilitate all admin tasks. In my current position I have created a shared database for the first team using OneDrive and in my past experiences I have used tools such as Trello and Planner to organise work, assign tasks and control their completion stage.

Project management: I led and coordinated multiple research projects simultaneously which included up to 15 experts from all around the world. I organised the team work proactively, distributing the workload according to members' skills, and ensuring work quality and compliance with deadlines. In my current position I coordinate the activity of over 10 people working with three different teams. I am also planning and implementing a 5-year strategy with related projects while taking care of the daily Sport Science provision for the first team.

Teamwork: I worked in and led small and large organizations and experienced the pros and cons of different organizational structures. In both cases, I fulfilled my tasks and supported my colleagues. I can interact with people working in different departments and can create good relationship with stakeholders.

Research methods: I support universities and other organisations to develop courses on Research Methods. I also provide guidance to fellow researchers, in and outside academia, on the best methods to conduct their research projects.

Critical thinking: I studied Epidemiology and Research Methods thoroughly and improved my ability to interpret research and to weight their findings according to their quality. I value the importance of high-quality research but recognise that evidence-based practice includes also coach experiences and player values.

Communication: I prepared several reports, dashboards, presentations, and lectures. I can adapt my written and oral communication to the role, interest, and level of understanding of the audience to keep them engaged and to ensure the delivery of key messages. I am proficient in English and Italian, can speak Spanish and French at an intermediate level.

ACADEMIC AWARDS AND FUNDING

- Edinburgh Napier University, Conference Grant 2023, 700£
 - Arsenal FC, Conference Grant 2022, 300£
 - Edinburgh Napier University, Conference Grant 2022, 600£
 - Edinburgh Napier University Small Project & Mobility Grants 2020, 770£
 - Arsenal FC & Edinburgh Napier University, PhD funding, 75000£
 - Catholic University of Milan Scholarship, 2014, 5200€
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COLLABORATIONS

FIFA Medical:

- Analysis of injury situations during FIFA tournaments
- FIFA women's research agenda

Arenal FC:

- Guidelines for recovery strategies and fatigue monitoring
- Development of protocols for the application of n-of-1 design

University of Vic:

- Perception of recovery strategies in elite football (PhD project, main supervisor)
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CONFERENCES

- **FIFA Medical Conference (invited speaker)**, presentation: 'FIFA Football Language – Medical Coding'. February 2024, Boston
 - **Isokinetic conference (Next Generation Leaders)**, presentation: 'Do injuries occur during high-speed running? A new GPS & video-based analysis'. May 2023, London
 - **European College of Sport Science Conference**, presentation: 'Injury inciting activities in male and female football players: a systematic review'. September 2022, Sevilla
 - **Edinburgh Napier University PGR Conference**, presentation: 'How do injuries occur in football?' June 2022, Edinburgh
 - **Edinburgh Napier University SEHS Conference**, presentation: 'Do hamstring injuries occur during high-speed running activities? A GPS analysis of elite European football players - preliminary results'. June 2022, Edinburgh
 - **Edinburgh Napier University SEHS Seminar**, presentation: 'Development of a classification system for inciting circumstances in football'. May 2022, Edinburgh
 - **Science In the City Bites**, March 2021, Edinburgh
 - **Italian Sport Science in the World**, presentation: 'differences between Italy and the UK'. February 2021, online
 - **Arsenal FC**, presentation: 'The efficacy of recovery strategies in football players'. January 2020
 - **Arsenal FC**, presentation: 'High-speed running exposure and risk of hamstring injuries in elite team sport players'. December 2019
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ACADEMIC SERVICE

Conferences organised:

- Napier PGR conference 2022
- Arsenal SEMS 2020 (cancelled due to COVID19)

Peer reviewing for the following journals:

- British Journal of Sports Medicine
 - Science and Medicine in Football
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REFERENCES

Dr. Alan McCall

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