

Course Guide 33231 Specific applications for swimming training

Vniver§itatö́dValència

COURSE DATA

Data Subject		
Code	33231	
Name	Specific applications for swimming training	
Cycle	Grade	
ECTS Credits	6.0	
Academic year	2024 - 2025	

Study (s)			
Degree	Center	Acad. Period year	
1312 - Degree in Physical Activity and Sport Sciences	Faculty of Physical Education and Sport Sciences	4 First term	
1331 - Degree in Physical Activity and Sport Sciences (Ont)	Faculty of Physical Education and Sport Sciences	4 First term	
Subject-matter			
Degree	Subject-matter	Character	
1312 - Degree in Physical Activity and Sport Sciences	29 - Applications for swimming training	Optional	
1331 - Degree in Physical Activity and Sport Sciences (Ont)	29 - Aplicación específica al entrenamiento en Natación	Optional	
Coordination			
Name	Department		
ENCARNACION MARTINEZ, ALBERTO	122 - Physical and Sports Ed	122 - Physical and Sports Education	
LLANA BELLOCH, SALVADOR	122 - Physical and Sports Education		

SUMMARY

Swimming as a sport emerged in the late nineteenth century. Since then, much he has changed his training, both technically and in water and dry. In this matter, the / as alumni / ae will expose the most accepted by the international community regarding the different alternatives for training aimed at skills competition.



Course Guide 33231 Specific applications for swimming training

Vniver§itatötdValència

PREVIOUS KNOWLEDGE

Relationship to other subjects of the same degree

There are no specified enrollment restrictions with other subjects of the curriculum.

Other requirements

To be able to take the course, students must have a basic knowledge of the technical execution model of the four styles of competition, as well as their starts and turns

Relationship with other subjects in the same degree course: - It is desirable to have passed Swimming (third year).

COMPETENCES (RD 1393/2007) // LEARNING OUTCOMES (RD 822/2021)

1312 - Degree in Physical Activity and Sport Sciences

- Know and understand the fundamentals of physical fitness for physical activity and sport.
- Design, implement and evaluate the teaching-learning processes related to physical activity and sport, paying attention to the individual, collective and contextual characteristics of people.
- Plan, implement and evaluate physical activity and sports programmes targeted at special populations.
- Apply information and communication technologies (ICTs) in the field of physical activity and sport sciences.
- Know and understand the fundamentals of sports training in individual sports.
- Plan, implement and evaluate training programmes in the aquatic environment.
- Apply physiological, biomechanical, behavioural and social principles to the different fields of physical activity and sport.
- Apply information and communication technologies (ICT) to the field of sports training.

LEARNING OUTCOMES (RD 1393/2007) // NO CONTENT (RD 822/2021)

The / the student / a will be able to start in swimming at competition level, acquiring the regulatory knowledge required level (1) (2) training of technical and tactical swimming, (3) physical training in water and dry, and (4) to plan competition seasons.



Course Guide 33231 Specific applications for swimming training

Vniver§itatö́dValència

DESCRIPTION OF CONTENTS

1. Specific components of swimming training

The swimming technique of the competition styles (butterfly, back, breaststroke, freestyle, individual and relay styles), their starts and turns.

2. Swimmer training systems in the water

Training means and methods in the so-called light aerobic, medium aerobic, anaerobic threshold, intense aerobic, lactate tolerance, lactate potency, alactium capacity and alactium potency training zones.

3. Dry swimmer training systems

Means and methods of flexibility training. Means and methods of muscle strength training.

4. Season design and planning

Traditional planning, integrated macrocycle planning, ATR planning, reverse planning.

WORKLOAD

ACTIVITY	Hours	% To be attended
Theory classes	30,00	100
Classroom practices	30,00	100
Study and independent work	54,00	0
Preparation of evaluation activities	14,00	0
ΤΟΙ	TAL 128,00	

TEACHING METHODOLOGY

1- Group learning with the teacher

- Theoretical classes (single group): will be held in classrooms of the FCAFD. They shall establish the theoretical framework for the content set out in paragraph 6.

- Practical classes (2 groups): they will take place in the swimming pool. In them, students will experience in a practical way the contents taught in the classroom and, progressively, they will have to reach the required level of execution.



2- Individual volunteer work

The aim of this course is for students to deepen their knowledge of a specific aspect of the subject. In order to do this, they must know how to use databases to find the information and then structure and integrate it into a document that they must present in class as a communication to the congress.

3- The tutoring

The tutorials will be carried out individually or in groups, either using the student's office hours, the school timetable or through the virtual classroom.

EVALUATION

Ordinary session (January).

The final grade for the course depends on the following topics:

SECTION 1: theoretical test.

A test of 40 multiple choice questions to be held on the date and time marked for the final exam of the subject in Centre Board. It will be possible to include some open-answer questions. The value of these questions will be reflected in the exam template and will be indicated well in advance to the students by the teacher. The multiple-choice questions will present 4 possible options, and only one of them will be true. The rating is as follows:

- Each hit will 0.25 points (10/40 = 0.25).

- Each error subtract one-third of what a success rate, ie, 0.25 / 3 = 0.083 points.

It is binding exceed 5 (out of 10) to pass the course.

Will mean up to 8 points in the final mark.

SECTION 2: voluntary activities.



2.1. practical test.

It will consist of test swim 200m individual medley (you can always make individual adaptations and when there is a medical justification told to do so), with the evaluation criteria include:

1. start, swim and turn in a regulated manner and according to the techniques taught in class,

2. the swimming rhythm must be "stable", as will be explained in class.

3. the mark will depend on the time obtained: 10 in the men's category will be a time of 2:40:00 or less and in the women's category 3:05:00 or less. From these marks onwards, every 15 seconds will be one point less.

Will mean up to 0,75 points in the final grade.

Students will only be able to take the practical part (2.1.) voluntarily in the first call (January). Those students who do NOT pass the theoretical part will keep the result of the practical part for the second exam of the same academic year.

2.2. Work.

Those students who wish may perform volunteer work. They must meet the following requirements:

Agree the issue with the teacher: deadline two weeks after the start of classes.

Delivery justified index: deadline two weeks from the consensus of the subject.



Delivery of the work: deadline first week of November.

The rating is	as follows:
---------------	-------------

Calificación del trabajo

Excelente 0,75 puntos Muy bueno 0,50 puntos Bueno 0,25 puntos Regular 0 puntos Malo 0 puntos

2.3. Attendance at conferences, seminars and/or workshops.

Attendance at conferences, seminars and/or workshops related to swimming, such as the Conference promoted by the Training and High Performance Teaching Unit, will be taken into account in the final grade, and may result in up to 1 point.

SECTION 3: attendance and participation in class.

Active participation in the development of classes may be up to 0.5 points in the final grade. This score will depend on the discretion of the professor.

FINAL GRADE



The final grade is obtained from the sum of the partial notes of each of those sections, as long as the theoretical exam is passed.

Second session.

The evaluation criteria are similar to those of the first call, therefore, the grade of the different sections is kept, which will have the same percentage value than in the first call (this will be valid within the the same academic year, i.e. no partial grades are kept from a course for the next academic year).

On the date and time approved by the Centre Board, a test will be carried out. similar to that indicated in section 1.

From section 2 (voluntary activities), documents justifying attendance at congresses may be presented (section 2.3.). The practical test (section 2.1.) may not be taken.

REFERENCES

Basic

- 1. Componentes específicos del entrenamiento en Natación/Specific elements of swimming training/Components específics de l'entrenament en Natació.

Aretz (2021) Breaststroke: Swimming for Kids: 3. Independently published.

Costill, Maglischo & Richardson (1995) Natación. Ed Hispano Europea.

Chollet (2003) Natación deportiva. Ed. INDE.

Colwin (1993) Swimming into the 21st Century. Human Kinetics.

Counsilman & Counsilman (1994) The new science of swimming. Ed. Prentice-Hall.

Guzmán (2017) The Swimming Drill Book. Ed. Human Kinetics.

Hall & Murphy (2020) Fundamentals of Fast Swimming: How to Improve Your Swim Technique. Ed. Owker.

Horsfield (2020) Breaststroke. Competitive Swimming Drills. Independently published.

Lozano & Perezuaga (2023) A 122m. El poder terapéutico de la apnea. Alienta Editorial.

Llana y Pérez (2008) Biomecánica de la natación. En Izquierdo (Ed.) Biomecánica y Bases Neuromusculares de la Actividad Física y el Deporte. Ed. Médica Panamericana.

Llana y Pérez (2017) Fundamentos físicos y biológicos del desempeño humano en el medio acuático. En Navarro, Gosálvez y Juarez (Coord) Natación+. RFEN.

Llana y Pérez (2017) Evolución histórica de la técnica de nado de los cuatro estilos de competición. En Navarro, Gosálvez y Juarez (Coord) Natación +. RFEN.

Llana, Richart, y Hervás (2017) Enseñanza de las técnicas de la natación deportiva. En Navarro, Gosálvez y Juarez (Coord) Natación +. RFEN.



Vniver§itatÿdValència

Maglischo (2009) Natación. Ed. Paidotribo.

Marinof & Coumbe-Lilley (2016) The science of sport Swimming. Ed. Crowood.
Mullen (2018) Swimming Science: Optimum performance in the water. Ed. Ivy Press.
Navarro, Arellano, Carnero y Gozalvez (1990) Natación. Comité Olímpico Español.
Riewald & Rodeo (2015) Science of swimming faster. Ed Human Kinetics.
Taormina (2014) Swim speed strokes for swimmers and triathletes. Ed. Velo Press.
Wilkie & Juba (1990) The handbook of swimming. Ed. Pelham books.
Young (2021) How To Teach Breaststroke. Educate and Learn Publishing.
Young (2022) How To Teach Butterfly: Basic technique drills, step-by-step lesson plans and everything in-between. A swimming teachers definitive guide to teaching ... stroke. Ed. Educate and Learn Publishing.

2. Sistemas de entrenamiento del nadador en el agua/Swimmer training systems in the water/Sistemes d'entrenament del nadador en l'aigua.

- Costill, Maglischo & Richardson (1995) Natación. Ed Hispano Europea.

Delerke (2022) High Performance Youth Swimming (Routledge Research in Paediatric Sport and Exercise Science). Ed. Routledge.

Epstein (2014) El gen deportivo: Un atleta excelente ¿nace o se hace?. Ed. Indicios.

Hamouche (2019) The biology of swimming. Independently published.

Kenney, Wilmore & Costill (2021) Physiology of Sport and Exercise. Ed. Humen Kinetics.

Madrid (2022) Cronobiología: Una guía para descubrir tu reloj biológico. Plataforma EditorialSola (2022) La naturaleza del entrenamiento: La Ciencia de la Complejidad aplicada al entrenamiento de resistencia. Agencia del ISBN

Maglischo (2009) Natación. Ed. Paidotribo.

Morgado (1993) Capacidad y potencia. Atletismo Español, nº 446, pp 46-49.

Mullen (2018) Swimming Science: Optimum performance in the water. Ed. Ivy Press.

Navarro, Arellano, Carnero y Gozalvez (1990) Natación. Comité Olímpico Español.

RFEN (2024) Apuntes Curso Entrenador Superior (nivel 3).

Valenzuela (2022) Hijos de la adversidad. Ed. Alienta.

Valenzuela (2023) Activa tus mitocondrias: El secreto para una vida más longeva. Ed. Alienta.

Vázquez (2018) Salud salvaje. Ed Anaya Multimedia.

VVAA (1994) Piragüismo II. Ed. COE.

Jornet, House & Johnston (2019) Entrenamiento para atletas de montaña. Ed Desnivel.

- Sola (2022) La naturaleza del entrenamiento. La Ciencia de la Complejidad aplicada al entrenamiento de resistencia. Agencia del ISBN.

Stro & Stro (2022) Supervivir. Vuelve al origen y recupera tu salud. E. Grijalbo.

3. Sistemas de entrenamiento del nadador en el seco/Dryland training systems/Sistemes d'entrenament del nadador en sec.

Entrenamiento de la fuerza muscular/Strength & conditioning training/Entrenament de la força muscular



Vniver§itatö́tdValència

- Costill, Maglischo & Richardson (1995) Natación. Ed Hispano Europea.

Delerke (2022) High Performance Youth Swimming (Routledge Research in Paediatric Sport and Exercise Science). Ed. Routledge.

Hekmati (2020) Foundations of Strength Training for Swimmers: A complete guide to develop swimming power and manage injuries. Independently published.

Navarro (1995) Entrenamiento y planificación de la fuerza. International Pro-Swimming.

Oca (2007) Planificación del entrenamiento de la fuerza. En Llana y Pérez (Coord.) Natación y Actividades Acuáticas. Ed. Marfil.

Oca y Navarro (2013) Entrenamiento físico de natación. Ed. Cultivalibros.

Schoenfeld, B., Grgic, J., & Krieger, J. (2019). How many times per week should a muscle be trained to maximize muscle hypertrophy? A systematic review and meta-analysis of studies examining the effects of resistance training frequency. Journal of Sports Sciences, 1-10. 7

Schoenfeld, B. J., Grgic, J., Van Every, D. W., & Plotkin, D. L. (2021). Loading Recommendations for Muscle Strength, Hypertrophy, and Local Endurance: A Re-Examination of the Repetition Continuum. Sports (Basel, Switzerland), 9(2), 32.

Tous (2000) Nuevas tendencias en fuerza y musculación. Ed. Tous Fajardo.

VVAA (1994) Piragüismo II. Ed. COE.

Vittori C. (1990) El entrenamiento de la fuerza para el sprint. Red: revista de entrenamiento deportivo.
 4(3):2-8

Weakley, Mann, Banyard, McLaren, Scott & Garcia-Ramos (2021) Velocity-Based Training: From Theory to Application. Strength and Conditioning Journal 43(2): p 31-49.

RFEN (2024) Apuntes Curso Entrenador Superior (nivel 3).

Entrenamiento de la flexibilidad/movilidad. Flexibility/mobility training. Entrenament de la flexibilitat/mobilitat.

- Anderson (2020) Stretching. Ed. Shelter Publications Inc.,U.S

Esnmode-White (2023) The Miracle of Flexibility: A Head-To-Toe Program to Increase Strength, Improve Mobility, and Become Pain Free. Ed. &S/Simon Element

Fukaya T, Sato S, Yahata K, Yoshida R, Takeuchi K, Nakamura M. (2022) Effects of stretching intensity on range of motion and muscle stiffness: A narrative review. J Bodyw Mov Ther. 32:68-76. doi: 10.1016/j.jbmt.2022.04.011. Epub 2022 Apr 20. PMID: 36180161

Konrad A & Tilp M (2014) Increased range of motion after static stretching is not due to changes in muscle and tendon structures. Clinical biomechanics (Bristol, Avon) 29(6) DOI: 10.1016/j.clinbiomech.2014.04.013

Konrad A & Tilp M (2014) Effects of ballistic stretching training on the properties of human muscle and tendon structures. J Appl Physiol 117: 29 35. doi:10.1152/japplphysiol.00195.2014

Konrad A Stalidis S & Tilp M (2017) Effects of acute static, ballistic, and PNF stretching exercise on the muscle and tendon tissue properties. Scand J Med Sci Sports. 27: 10701080. DOI: 10.1111/sms.12725

Laughlin (2014) Stretching & Flexibility. Edi. BodyPress

Nordin (2021) Basic Biomechanics of the Musculoskeletal System. Ed. Wolters Kluwer Health. Sölveborn (1987) Stretching. Ediciones Martínez Roca, S.A.

4. Diseño y planificación de la temporada/Design and planning of the season/Disseny i planificació de



Vniver§itatö́dValència

la temporada.

 Bompa & Buzzichelli (2015) Periodization training for sports. Ed Human Kinetics. King, I. (2000) Foundations of Physical Preparation. Ed. King Sports International. Kiely, J. Periodization Theory: Confronting an Inconvenient Truth. Sports Med 48, 753764 (2018). https://doi.org/10.1007/s40279-017-0823-y
 Navarro (1995) Entrenamiento y planificación de la fuerza. International Pro-Swimming. Navarro, Oca y Rivas (2010) Planificación del entrenamiento y su control. Ed. Cultiva Libros S.L. Navarro, Arellano, Carnero y Gozálvez (1990) Natación. Ed. COE.
 VVAA (1994) Piragüismo II. Ed. COE.

