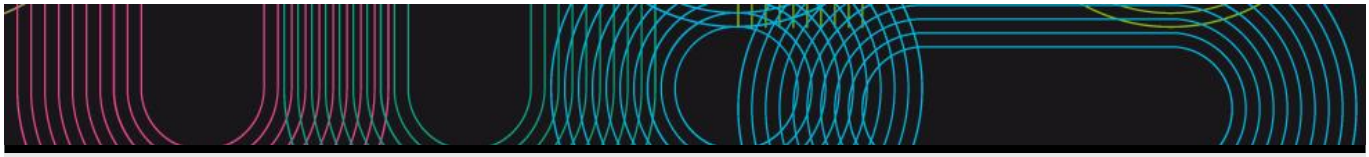

(*)Facultade de Ciencias da Educación e do Deporte

Máster Universitario en Investigación en Actividad Física, Deporte y Salud

Subjects

Year 1st

Code	Name	Quadmester	Total Cr.
P02M156V01101	Research Methods in Physical Activity and Sports Sciences	1st	3
P02M156V01102	Scientific Communication and Documentation Sources in Physical Activity and Sports Sciences	1st	3
P02M156V01103	Experimental and Quasi-experimental Methods in Physical Activity and Sports Sciences	1st	3
P02M156V01104	Selective Correlational Methodology	1st	3
P02M156V01105	Observation Designs Applied to Sports Research	1st	3
P02M156V01106	Qualitative Methods in Physical Activity and Sports Sciences	1st	3
P02M156V01107	Systematic Review and Meta-analysis	1st	3
P02M156V01108	Exploratory Data Analysis and Inferential Analysis	1st	4
P02M156V01109	Multivariate Analysis	1st	5
P02M156V01201	Exercise and Physical Condition in Performance and Health	2nd	20
P02M156V01202	Learning and Motor Control	2nd	20
P02M156V01203	Research in Physical Education, Physical Activity and Sports	2nd	20
P02M156V01204	Analysis of Sports Performance	2nd	20
P02M156V01205	Aquatic Activities and Life Saving	2nd	20
P02M156V01206	Final Year Dissertation	2nd	10

IDENTIFYING DATA

Research Methods in Physical Activity and Sports Sciences

Subject	Research Methods in Physical Activity and Sports Sciences			
Code	P02M156V01101			
Study programme	Máster Universitario en Investigación en Actividad Física, Deporte y Salud			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	3	Mandatory	1st	1st
Teaching language	Spanish Galician			
Department				
Coordinator	Gutierrez Sánchez, Águeda Rey Cao, Ana Isabel			
Lecturers	Gutierrez Sánchez, Águeda Rey Cao, Ana Isabel			
E-mail	anacao@uvigo.gal agyra@uvigo.gal			
Web				
General description	In the course will facilitate a basic understanding of the characteristics of the scientific knowledge how cultural phenomenon and historical builded. They Will seat the bases for it construcción of investigations with coherence epistemological and methodological.			

Training and Learning Results

Code	
A1	Own and understand knowledge that provide a base or an opportunity to be original at the develop or application of ideas, often in a research context.
A2	The students known to apply the acquire knowledge and be able to solve problem in new environment or less known in wider contexts (or multidisciplinary) related with their study area.
A3	The students known to integrate knowledge and confront the complexity of formulate judgments from information that, been incomplete or limited, include reflexions about social and ethics responsibilities linked to the application of their knowledge and judgments.
A5	The students own the ability of learn to continuos studying, in wide range, on a self-directed and autonomous way.
B2	Be able to devise, design, put in to practice and adopt a research process rigorously academics in the physical activity, health and sports study ambit.
B4	Critically analyze, evaluate and synthesize new and complex ideas in the physical activity, health and sports study ambit.
C1	Be able to differentiate and select the paradigm, epistemological framework and reference scientific methodology in the design of the studies in the physical activity, health and sports study ambit.
C2	Develop scientific thoughts capacity to research in the physical activity, health and sports study ambit.
C3	Be able to analyze and understand the varied theories and the state of matter in the physical activity, health and sports study ambit.
C4	Show link attitudes with excellence habits, ethical commitment and quality in the research exercise physical activity, health and sports study ambit
C7	Assess, manage and combine different techniques of physical activity, health and sports sciences research.
C8	Analyze on a critically the methodological options that arise in the physical activity, health and sports study ambit.
C9	Be able to design and implement a research work in the physical activity, health and sports study ambit.
D1	Critically assess the knowledge, the technology and the available information to solve problems.
D3	Be able to promote in academic and professional contexts activities to improve the technological advance, social and cultural, in physical activity, health and sports sciences field.
D4	Use basic tools of information and communication technologies (ICTs) needed for their profession exercise and for the lifelong learning.

Expected results from this subject

Expected results from this subject	Training and Learning Results			
- Know and pose a research problem.		B2	C1 C2 C3	D1 D4
- Know and know draft hypothesis of investigation.	A1 A2	B2	C2 C9	

- Know and know define the variables of investigation.	A1 A2 A3	B2 B4	C2 C9	
- Be able to interpret results, argue them and obtain conclusions of the same.	A1 A2 A3 A5	B2 B4	C2 C4 C9	D1 D3 D4
- Knowledge of the different technical of investigation.	A5		C7 C8	D3 D4

Contents

Topic
1. The investigation in sciences of the physical activity, sport and health.
2. The scientific approach. The cycle of application in the sciences of the physical activity, sport and health.
3. Approach of the problem in the sciences of the physical activity, sport and health.
4. The hypothesis in the scientific investigation in the sciences of the physical activity, sport and health.
5. Variables of investigation in sciences of the physical activity, sport and health.
7. Collected and analysis of data in the sciences of the physical activity, sport and health.
8. Interpretation, discussion and communication of results in the field of sciences of physical activity, sport and health.

Planning

	Class hours	Hours outside the classroom	Total hours
Lecturing	10	30	40
Problem solving	5	15	20
Autonomous problem solving	1	14	15

*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

Methodologies

	Description
Lecturing	The lectures focus primarily on the expository nature of the subject matter. Knowledge (technical competence) is addressed, although skills, skills of behavior, and mannerism are also addressed. The lecturer plays an eminently active role. Students are responsible for taking notes, discussing, relating concepts, or asking questions.
Problem solving	Formulation, analysis, resolution and debate by students of a problem or exercise related to the subject matter.
Autonomous problem solving	Formulation, analysis, resolution and debate by students of a problem or exercise related to the subject matter. Realization of works connected with the subject.

Personalized assistance

Methodologies	Description
Autonomous problem solving	Counseling and tutoring to solve the problems arisen in the matter. This time is set aside to meet and resolve the doubts of students. The attention will be individually and in small groups, depending on the nature of the attention. Whenever an individual will take place in the office of teaching, by videoconference or by mail. These activities have as their function and guiding the learning process of the students.

Assessment

	Description	Qualification	Training and Learning Results	
Lecturing	Examination of the contents treated in class. Control of the assistance and critical participation in the face-to-face classrooms.	40	C2	D1 D3

Problem solving	Evaluation and correction of the exercises and activities proposed in the face-to-face classroom.	20			C4 C7 C8	D1 D4
Autonomous problem solving	Development, implementation and correct and activities proposed for its accomplishment outside classroom hours . Correction of the assignments linked to the matter.	40	A1 A2 A3 A5	B2 B4	C2 C4 C7 C8 C9	

Other comments on the Evaluation

Continuous evaluation regime:

To be able to access the continuous evaluation modality, it is necessary to perform all the tests explained above.

Students who do not develop these methods will not be able to access the continuous assessment. In these cases, you can opt for the global evaluation. If the subject is not passed in the first call, the evaluation in the second call will be carried out exclusively through a written test.

Students who find themselves in special and/or justified circumstances that prevent them from completing any of the evaluation tools must communicate this at the beginning of the course in order to be able to adapt the evaluation to their case. In the event that any exceptional circumstances occur during the development of the course, it must be communicated at least two months in advance of the official date of the exam.

Global evaluation regime:

The students who have not opted for the continuous evaluation, will carry out a global evaluation on the official dates. The tests will allow you to obtain 100% of the subject's grade.

Sources of information

Basic Bibliography

Acevedo-Díaz, J. A., Vázquez-Alonso, A., Manassero-Mas, Mª.A. & Acevedo-Romero, P., **Consensos sobre la naturaleza de la ciencia: fundamentos de una investigación empírica.**, 2007

Barriga, O. & Henríquez, G., **La Presentación del Objeto de Estudio. Reflexiones desde la práctica docente.**, 2003

Bourdieu, P., **El oficio de científico. Ciencia de la ciencia y reflexividad.**, 1ª ed., Anagrama, 2003

Fernández, I., Gil, D., Carrascosa, J., Cachapuz, A. & Praia, J., 2002

Rey Cao, A., **Ciencia y motricidad. Epistemología de las ciencias de la actividad física y el deporte.**, 1ª ed., Dykinson, 2014

Complementary Bibliography

Balcells i Junyent, J., **La investigación social. Introducción a los métodos y técnicas.**, 1ª ed., PPU, 1994

Bericat, E., **La integración de los métodos cuantitativo y cualitativo en la investigación social.**, 1ª ed., Ariel, 1998

Bourdieu, P., Chamboredon, J.C., & Passeron, J.C., **El oficio de sociólogo, presupuestos epistemológicos**, 2ª ed., Siglo XX1, 1989

Bunge, M., **La Investigación científica**, 2ª ed., Ariel, 1985

Chalmers, A.F., **¿Qué es esa cosa llamada ciencia?**, 1ª ed., Siglo XX1, 1983

Ferreira, M., **La nueva sociología de la ciencia: el conocimiento científico bajo una óptica post-positivista. Nómadas.**, 2007

Guba, E. G. & Lincoln, Y. S., **Competing Paradigms in Qualitative Research. En N.K. Denzin &Y.S. Lincoln (Eds.),Handbook of Qualitative Research.**, Sage, 1994

Gutiérrez-Dávila, M. y Oña, A., **Metodología en las ciencias del deporte.**, 1ª ed., Síntesis, 1982

Harding, S., **Ciencia y feminismo.**, 1ª ed., Morata, 1996

Heinemann, K., **Introducción a la metodología de la investigación empírica. El ejemplo en las ciencias del deporte.**, 1ª ed., Paidotribo, 2003

Kuhn, T.S., **La estructura de las revoluciones científicas.**, 1ª ed., Fondo de Cultura Económica, 2000

Longino, H., **Subjects, Power, and Knowledge: Description and Prescription in Feminist Philosophies of Science, en Linda Alcoff y Elizabeth Potter (eds.). Feminist Epistemologies (pp. 101-121).**, 1ª ed., Routledge, 1993

Lozares, C.; Martín, A. & López, P., 1998

Maffia, D., **Epistemología feminista: La subversión semiótica de las mujeres en la ciencia.**, 2007

McGuigan, F.J., **Psicología experimental. Enfoque metodológico.**, Trillas, 1972

Padrón, J., **Tendencias Epistemológicas de la Investigación científica en el Siglo XXI.**, 2007

Pereda, S., **Psicología Experimental. I. Metodología.**, 1ª ed., Trillas, 1987

Sidman, M., **Pácticas de investigación científica.**, 1ª ed., Fontanella, 1978

Tomas, J. R. & Nelson, J.K., **Métodos de investigación en actividad física.**, 1ª ed., Paidotribo, 2006

Recommendations
Subjects that continue the syllabus
Scientific Communication and Documentation Sources in Physical Activity and Sports Sciences/P02M156V01102
Qualitative Methods in Physical Activity and Sports Sciences/P02M156V01106
Experimental and Quasi-experimental Methods in Physical Activity and Sports Sciences/P02M156V01103
Selective Correlational Methodology/P02M156V01104
Systematic Review and Meta-analysis/P02M156V01107

IDENTIFYING DATA

A Comunicación Científica e Fontes Documentais nas Ciencias da Actividade Física e o Deporte

Subject	A Comunicación Científica e Fontes Documentais nas Ciencias da Actividade Física e o Deporte			
Code	P02M156V01102			
Study programme	Máster Universitario en Investigación en Actividade Física, Deporte e Saúde			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	3	Mandatory	1	1c
Teaching language	Galego			
Department	Didácticas especiais			
Coordinator	Romo Pérez, Vicente			
Lecturers	Romo Pérez, Vicente			
E-mail	vicente@uvigo.es			
Web				
General description	Esta materia aborda contidos relacionados coa búsqueda e a identificación das fontes de información científica de calidade e a comunicación eficaz do novo coñecemento científico que se xenera.			

Resultados de Formación e Aprendizaxe

Code	
A1	Posuír e comprender coñecementos que acheguen unha base ou oportunidade de ser orixinais no desenvolvemento e/ou aplicación de ideas, adoito nun contexto de investigación.
A2	Que os estudantes saiban aplicar os coñecementos adquiridos e a súa capacidade de resolución de problemas en contornos novos ou pouco coñecidos dentro de contextos máis amplos (ou multidisciplinares) relacionados coa súa área de estudo.
A3	Que os estudantes sexan capaces de integrar coñecementos e se enfrontar á complexidade de formular xuízos a partir dunha información que, sendo incompleta ou limitada, inclúa reflexións sobre as responsabilidades sociais e éticas vinculadas á aplicación dos seus coñecementos e xuízos.
A4	Que os estudantes saiban comunicar as súas conclusións, e os coñecementos e razóns últimas que as sustentan, a públicos especializados e non especializados dun xeito claro e sen ambigüidades.
A5	Que os estudantes posúan as habilidades de aprendizaxe que lles permitan continuar estudando dun xeito que terá que ser, en grande medida, autodirixido e autónomo.
B2	Ser capaz de idear, deseñar, poñer en práctica e adoptar un proceso de investigación con rigor académica no ámbito de estudo da actividade física, saúde e deporte.
B4	Analizar de forma crítica, evaluar e sintetizar ideas novas e complexas no ámbito de estudo da actividade física, saúde e deporte.
C4	Mostrar as actitudes vinculadas cos hábitos de excelencia, compromiso ético e calidade no exercicio investigador no no ámbito da actividade física, saúde e deporte.
C5	Coñecer e dominar os procedementos e ferramentas de procura de información, tanto en fontes primarias como secundarias nas Ciencias da Actividade Física e o Deporte.
C6	Ser capaz de analizar, organizar, seleccionar, clasificar e compilar a información recolleita no no ámbito da actividade física, saúde e deporte.
C14	Planificar, redactar e expoñer verbalmente un traballo de investigación no área Ciencias da Actividade Física e o Deporte
C15	Redactar de forma precisa e cun uso apropiado da linguaxe científica unha memorias de investigación nas Ciencias da Actividade Física e o Deporte.
C16	Ser capaz de incorporar novas tecnoloxías e integrar coñecementos doutros ámbitos profesionais e científicos
D1	Valorar críticamente o coñecemento, a tecnoloxía e a información dispoñible para a resolución de problemas.
D2	Comunicar eficazmente en ámbitos académicos e divulgativos ideas e conceptos vinculados co estudos da actividade física, a saúde e o deporte.
D3	Ser capaz de promover en contextos académicos e profesionais accións destinadas ao avance tecnolóxico, social ou cultural, no ámbito das ciencias da actividade física, saúde e deporte.
D4	Utilizar as ferramentas básicas das tecnoloxías da información e as comunicacións (TIC) necesarias para o exercicio da súa profesión e para a aprendizaxe ao longo da súa vida.

Resultados previstos na materia

Expected results from this subject	Training and Learning Results

Coñecer e saber identificar e xestionar as diferentes fontes de información	A1 A2 A5	B4	C5 C6 C16	D1 D4
Coñecer e saber utilizar os programas de procura bibliográfica	A1 A2 A5	B4	C5 C6 C16	D4
Coñecer e saber utilizar as normas APA e Vancouver	A4	B2	C14 C15 C16	D2 D3
Saber utilizar polo menos un xestor bibliográfico		B2	C6 C16	D4
Coñecer e saber utilizar as técnicas de redacción dun artigo científico	A2 A3	B2 B4	C4 C14 C15 C16	D2 D3 D4
Saber redactar un informe ou unha memoria de investigación	A3 A4	B2 B4	C6 C15	D1 D2 D3
Saber redactar a resposta a unha revisión	A3 A4	B4	C6 C14 C15	D1 D2
Coñecer a importancia dá identificación do autor (nome e filiación) para lograr a maior visibilidade posible nos motores de procura bibiográficos	A1 A2		C4 C5 C14 C15	D1 D2

Contidos

Topic	
As fontes documentais. Normalización	Identificación de autor: nome e filiación. As fontes de normalización bibliográfica. Normas ISO, APA e Vancouver Uso de bases de datos científicas: SporDiscus, Scopus e WoS. Xestión da bibliografía. End Note, RefWorks e Mendeley
A comunicación científica	Lectura rápida e análise de artigos (incluíndo o risco de sesgo). Redacción de textos científicos e sometemento de artigos. Comunicación técnico-científica en inglés en ciencias da actividade física, deporte e saúde.

Planificación

	Class hours	Hours outside the classroom	Total hours
Lección maxistral	5	0	5
Resolución de problemas	10	20	30
Traballo tutelado	2	30	32
Exame de preguntas obxectivas	2	6	8
*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.			

Metodoloxía docente

	Description
Lección maxistral	Exposición dos principais contidos teóricos da materia con axuda de medios audiovisuais.
Resolución de problemas	Actividades nas que se formulan problemas e/ou exercicios relacionados coa materia.
Traballo tutelado	O alumno debe desenvolver de forma autónoma a análise e resolución dos problemas e/ou exercicios.

Atención personalizada

Methodologies	Description
Resolución de problemas	O alumnado terá á súa disposición titorías personalizadas de forma presencia (previa cita) ou virtual (plataforma de tele-formación ou correo electrónico) para orientar os traballos e resolver as dúbidas que puidesen xurdir durante a súa elaboración.
Traballo tutelado	Os alumnos terán á súa disposición titorías personalizadas de forma presencial (Previas cita) ou virtual (Plataforma de teleformación ou correo electrónico) para orientar os traballos e resolver as dúbidas que puidesen xurdir durante a súa elaboración.

Avaliación

	Description	Qualification	Training and Learning Results			
Lección maxistral	A presenza dos/as estudantes na aula durante a impartición dos contidos do tema 2, "A comunicación científica", terase en conta porque durante as sesións proporanse tarefas e debates nos que só poderán participar si están presentes.	10	A1 A2 A3 A4 A5	B2 B4	C4 C5 C6 C14 C15 C16	D1 D2 D3 D4
Resolución de problemas	Analizar un artigo, detectar as diferenzas na elaboración dos diferentes apartados e propor unha alternativa aos mesmos. Redactar o borrador dun artigo e seleccionar as revistas indexadas máis adecuadas para o seu sometemento.	30	A1 A2 A3 A4 A5	B2 B4	C4 C5 C6 C14 C15 C16	D1 D2 D3 D4
Traballo tutelado	Traballo práctico onde se apliquen os contidos relativos ás fontes de normalización bibliográfica o uso de base de datos científicas e a xestión da bibliografía.	40	A1 A2 A3 A4 A5	B2 B4	C4 C5 C6 C14 C15 C16	D1 D2 D3 D4
Exame de preguntas obxectivas	No Tema 1: Consistirá nunha proba práctica na que o alumnado deberá responder (e incluír capturas de pantalla) a cuestións relacionadas cos contidos do tema. No Tema 2: Consistirá nun cuestionario tipo test sobre os contidos teóricos e prácticos e sobre a súa aplicación en situacións simuladas.	20	A1		C5	

Other comments on the Evaluation

Os textos e probas presentaranse ao alumno redactados no idioma de impartición da materia (castelán). Se algún alumno desexase unha copia do mesmo noutro idioma oficial da UDC deberá solicitalo ao profesor coordinador unha semana antes da data da súa realización.

Todo o exposto con anterioridade será de aplicación tanto para o alumnado con dedicación a tempo completo como para aquel con dedicación a tempo parcial. No caso da Sesión Maxistral (metodoloxía de avaliación que require asistencia), o alumno/a con matrícula a tempo parcial e dispensa académica de exención de asistencia traspasarase o 10% da avaliación á proba obxectiva, que pasará a ponderar un 30% nestes casos.

A realización fraudulenta de probas ou actividades de avaliación implicará a cualificación de suspenso na convocatoria e respecto á materia na que se cometese: o/a estudante será cualificado con "suspenso" (nota numérica 0) na convocatoria correspondente do curso académico, tanto se a comisión da falta prodúcese na primeira oportunidade como na segunda. Para isto, procederase a modificar a súa cualificación na acta de primeira oportunidade, se fose necesario (Regulamento disciplinar do estudantado da UDC, art. 11, apdo 4 b). Entenderase por fraude académica calquera comportamento premeditado tendente a falsear os resultados dun exame ou traballo, propio ou alleo, realizado como requisito para superar unha materia ou acreditar o rendemento académico (Lei 3/2022, do 24 de febreiro, de convivencia universitaria; art. 11, apdo g)

Bibliografía. Fontes de información

Basic Bibliography

Elena D. Kallestinova, **How to Write Your First Research Paper. Yale J Biol Med. 2011 September; 84(3): 181□190**, 2011

Sandra V. Kotsis, Kevin C. Chung, **A Guide for Writing in the Scientific Forum. Plast Reconstr Surg. 2010 November; 126(5): 1763□1771**, 2010

Charles T. Quinn, A. John Rush, **Writing and Publishing Your Research Findings. J Investig Med. 2009 June; 57(5): 634□639**, 2019

American Psychological Association, **Publication Manual of the American Psychological Association**, American Psychological Association, 2013

M. Carmen Rodríguez Otero, **Guía de uso de Mendeley.**, 2015

Complementary Bibliography

Patrias K., **Citing medicine: the NLM style guide for authors**, National Library of Medicine, 2007

Recomendacións

Other comments

Co fin de mellorar o sistema de garantía interna de calidade do noso centro, sería conveniente que o alumnado atendese á solicitude realizada pola UDC, con periodicidade cuadrimestral, respecto a participar no proceso de avaliación das materias cursadas e cuxa chamada realiza baixo o nome de AVALÍA consistindo en responder os cuestionarios que avalían a docencia do profesorado en cada materia.

IDENTIFYING DATA

Metodoloxía Experimental e Cuasiexperimental nas Ciencias da Actividade Física e o Deporte

Subject	Metodoloxía Experimental e Cuasiexperimental nas Ciencias da Actividade Física e o Deporte			
Code	P02M156V01103			
Study programme	Máster Universitario en Investigación en Actividade Física, Deporte e Saúde			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	3	Mandatory	1	1c
Teaching language	Castelán Galego			
Department	Didácticas especiais			
Coordinator	Romo Pérez, Vicente			
Lecturers	Romo Pérez, Vicente			
E-mail	vicente@uvigo.es			
Web				
General description	Con este método trátase de pór de manifesto as relacións causales entre a exposición e a resposta. Debido ás limitacións que presenta esta metodoloxía con persoas é polo que a materia céntrase nos estudos cuasiexperimentales.			

Resultados de Formación e Aprendizaxe

Code	
A1	Posuír e comprender coñecementos que acheguen unha base ou oportunidade de ser orixinais no desenvolvemento e/ou aplicación de ideas, adoito nun contexto de investigación.
A2	Que os estudantes saiban aplicar os coñecementos adquiridos e a súa capacidade de resolución de problemas en contornos novos ou pouco coñecidos dentro de contextos máis amplos (ou multidisciplinares) relacionados coa súa área de estudo.
A3	Que os estudantes sexan capaces de integrar coñecementos e se enfrontar á complexidade de formular xuízos a partir dunha información que, sendo incompleta ou limitada, inclúa reflexións sobre as responsabilidades sociais e éticas vinculadas á aplicación dos seus coñecementos e xuízos.
A5	Que os estudantes posúan as habilidades de aprendizaxe que lles permitan continuar estudando dun xeito que terá que ser, en grande medida, autodirixido e autónomo.
B1	Coñecer e comprender o campo de estudo da actividade física, saúde e deporte, adquirindo un suficiente de habilidades e métodos de investigación en devandita área.
B2	Ser capaz de idear, deseñar, poñer en práctica e adoptar un proceso de investigación con rigor académica no ámbito de estudo da actividade física, saúde e deporte.
B4	Analizar de forma crítica, evaluar e sintetizar ideas novas e complexas no ámbito de estudo da actividade física, saúde e deporte.
C7	Valorar, manexar e combinar as diferentes técnicas de investigación nas Ciencias da Actividade Física, deporte e saúde.
C8	Analizar de xeito crítico as opcións metodológicas que se presentan no ámbito da actividade física, saúde e deporte.
C9	Ser capaz de deseñar e implementar un traballo de investigación nas Ciencias da Actividade Física e o Deporte.
D1	Valorar críticamente o coñecemento, a tecnoloxía e a información dispoñible para a resolución de problemas.
D2	Comunicar eficazmente en ámbitos académicos e divulgativos ideas e conceptos vinculados co estudos da actividade física, a saúde e o deporte.
D3	Ser capaz de promover en contextos académicos e profesionais accións destinadas ao avance tecnolóxico, social ou cultural, no ámbito das ciencias da actividade física, saúde e deporte.
D4	Utilizar as ferramentas básicas das tecnoloxías da información e as comunicacións (TIC) necesarias para o exercicio da súa profesión e para a aprendizaxe ao longo da súa vida.

Resultados previstos na materia

Expected results from this subject	Training and Learning Results			
Coñecer e saber realizar un deseño de investigación coa metodoloxía experimental e cuasiexperimental	A1 A2 A3 A5	B1 B2 B4	C7 C8 C9	D1 D2 D3 D4

Saber analizar os resultados, interpretalos, discutilos e obter conclusións dos mesmos.	A1	B1	C7	D1
	A2	B2	C8	D2
	A3	B4	C9	D3
	A5			D4

Contidos

Topic	
1.- O deseño experimental e cuasiexperimental en ciencias da actividade física e do deporte.	1.1. Caracterísicas do deseño experimental e cuasiexperimental. 1.2. Deseño de comparación de grupos. - Univariante / multivariante - Unifactorial / factorial - Intersujeto / intrasujeto - Aleatoriazación completa / restrinxida
2.- O control experimental. Validez	2.1. Varianza total, varianza sistemática, varianza erro. 2.2. *Maximizar, minimizar, controlar. 2.3. Técnicas de control da varianza. - Varianza sistemática primaria - Varianza sistemática secundaria - Varianza erro 2.4. Validez interna. 2.5. Validez externa
3.- Deseños unifactoriales e deseños factoriales	3.1. Deseños unifactoriales intersujetos 3.2. Deseños unifactoriales intra-suxeitos 3.3. Deseños factoriales
4.- Deseños preexperimentales, cuasiexperimentales. Deseños de caso único. Deseños de series temporais	4.1. Deseños preexperimentales e deseños cuaiexperimentales 4.2. Deseños de series temporais 4.3. Deseños de caso único

Planificación

	Class hours	Hours outside the classroom	Total hours
Lección maxistral	10	0	10
Resolución de problemas de forma autónoma	0	30	30
Resolución de problemas	5	30	35

*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

Metodoloxía docente

	Description
Lección maxistral	Exposición por parte do profesor dos contidos sobre a materia obxecto de estudo, bases teóricas e/ou directrices dun traballo, exercicio ou proxecto a desenvolver polo estudante.
Resolución de problemas de forma autónoma	O alumno debe desenvolver de forma autónoma a análise e resolución dos problemas e/ou exercicios.
Resolución de problemas	Actividade na que se formulan problema e/ou exercicios relacionados coa materia. O alumno debe desenvolver as solucións adecuadas ou correctas mediante a exercitación de rutinas, a aplicación de fórmulas ou algoritmos, a aplicación de procedementos de transformación da información dispoñible e a interpretación dos resultados. Adóitase utilizar como complemento da lección maxistral.

Atención personalizada

Methodologies	Description
Resolución de problemas	Actividade na que se formulan problema e/ou exercicios relacionados coa materia. O alumno debe desenvolver as solucións adecuadas ou correctas mediante a exercitación de rutinas, a aplicación de fórmulas ou algoritmos, a aplicación de procedementos de transformación da información dispoñible e a interpretación dos resultados. Adóitase utilizar como complemento da lección maxistral.

Avaliación

	Description	Qualification	Training and Learning Results			
Lección maxistral	Exame pregunta curta e/ou tipo test	30	A1	B1	C7	D1
			A2	B2	C8	D2
			A3	B4	C9	D3
			A5			D4

Resolución de problemas de forma autónoma	Avaliarase a calidade do traballo presentado	40	A1 A2 A3 A5	B1 B2 B4	C7 C8 C9	D1 D2 D3 D4
Resolución de problemas	Resolución de supostos prácticos	30	A1 A2 A3 A5	B1 B2 B4	C7 C8 C9	D1 D2 D3 D4

Other comments on the Evaluation

Avaliación continua: Realizar as probas mencionadas anteriormente.

Avaliación global: O alumnado deberá realizar as probas non superadas, e conservarase a nota daqueles aspectos xa superados ou realizados.

Bibliografía. Fontes de información

Basic Bibliography

Thomas, J. R., Martin, P., Etnier, J., & Silverman, S. J., **Research methods in physical activity.**, Human Kinetics, 2022

Complementary Bibliography

Sofia Fontes de Gracia, **Diseños de investigación en psicología**, UNED,

Recomendacións

IDENTIFYING DATA

Metodoloxía Selectivo Correlacional

Subject	Metodoloxía Selectivo Correlacional			
Code	P02M156V01104			
Study programme	Máster Universitario en Investigación en Actividade Física, Deporte e Saúde			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	3	Mandatory	1	1c
Teaching language	Castelán			
Department	Didácticas especiais Dpto. Externo			
Coordinator	Romo Pérez, Vicente			
Lecturers	Arce Fernández, Costantino Romo Pérez, Vicente			
E-mail	vicente@uvigo.es			
Web				
General description	Nesta materia preténdese que ao alumnado coñeza as técnicas de mostraxe e saiba construír e analizar un cuestionario.			

Resultados de Formación e Aprendizaxe

Code	
A1	Posuír e comprender coñecementos que acheguen unha base ou oportunidade de ser orixinais no desenvolvemento e/ou aplicación de ideas, adoito nun contexto de investigación.
A2	Que os estudantes saiban aplicar os coñecementos adquiridos e a súa capacidade de resolución de problemas en contornos novos ou pouco coñecidos dentro de contextos máis amplos (ou multidisciplinares) relacionados coa súa área de estudo.
A3	Que os estudantes sexan capaces de integrar coñecementos e se enfrontar á complexidade de formular xuízos a partir dunha información que, sendo incompleta ou limitada, inclúa reflexións sobre as responsabilidades sociais e éticas vinculadas á aplicación dos seus coñecementos e xuízos.
A5	Que os estudantes posúan as habilidades de aprendizaxe que lles permitan continuar estudando dun xeito que terá que ser, en grande medida, autodirixido e autónomo.
B1	Coñecer e comprender o campo de estudo da actividade física, saúde e deporte, adquirindo un suficiente de habilidades e métodos de investigación en devandita área.
B2	Ser capaz de idear, deseñar, poñer en práctica e adoptar un proceso de investigación con rigor académica no ámbito de estudo da actividade física, saúde e deporte.
B4	Analizar de forma crítica, evaluar e sintetizar ideas novas e complexas no ámbito de estudo da actividade física, saúde e deporte.
C7	Valorar, manexar e combinar as diferentes técnicas de investigación nas Ciencias da Actividade Física, deporte e saúde.
C8	Analizar de xeito crítico as opcións metodológicas que se presentan no ámbito da actividade física, saúde e deporte.
C9	Ser capaz de deseñar e implementar un traballo de investigación nas Ciencias da Actividade Física e o Deporte.
D1	Valorar críticamente o coñecemento, a tecnoloxía e a información dispoñible para a resolución de problemas.
D2	Comunicar eficazmente en ámbitos académicos e divulgativos ideas e conceptos vinculados co estudos da actividade física, a saúde e o deporte.
D3	Ser capaz de promover en contextos académicos e profesionais accións destinadas ao avance tecnolóxico, social ou cultural, no ámbito das ciencias da actividade física, saúde e deporte.
D4	Utilizar as ferramentas básicas das tecnoloxías da información e as comunicacións (TIC) necesarias para o exercicio da súa profesión e para a aprendizaxe ao longo da súa vida.

Resultados previstos na materia

Expected results from this subject	Training and Learning Results			
Coñecer e saber realizar un deseño de investigación con metodoloxía selectivo correlacional	A1 A2 A3 A5	B1 B2 B4	C7 C8 C9	D1 D2 D3 D4
Saber analizar os resultados e interpretalos	A1 A2 A3 A5	B1 B2 B4	C7 C8 C9	D1 D2 D3 D4

Contidos	
Topic	
Mostraxe e tipos de mostraxe nas ciencias da actividade física, deporte e saúde	Cálculo do tamaño mostra Técnicas de mostraxe Mostro estratificado Nivel de confianza e erro de mostraxe
Deseños de enquisas nas ciencias da actividade física, deporte e saúde	Métodos de recollida de datos. A Enquisa
O cuestionario nas ciencias da actividade física, deporte e saúde	Deseño de cuestionarios Fiabilidade e validez
Entrevista nas ciencias da actividade física, deporte e saúde	Características da entrevista
Análise factorial	Análise factorial exploratorio

Planificación	Class hours	Hours outside the classroom	Total hours
Lección maxistral	10	0	10
Resolución de problemas de forma autónoma	0	60	60
Resolución de problemas	5	0	5
*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.			

Metodoloxía docente	Description
Lección maxistral	Exposición dos contidos da materia por parte do profesorado
Resolución de problemas de forma autónoma	O alumno debe desenvolver de forma autónoma a análise e resolución dos problemas e/ou exercicios.
Resolución de problemas	Formulación, análise, resolución e debate dun problema ou exercicio relacionado coa temática da materia complemento da lección maxistral.

Atención personalizada	
Methodologies	**Description**
Resolución de problemas	Formulación, análise, resolución e debate dun problema ou exercicio relacionado coa temática da materia complemento da lección maxistral.
Resolución de problemas de forma autónoma	O alumno debe desenvolver de forma autónoma a análise e resolución dos problemas e/ou exercicios.

Avaliación	Description	Qualification	Training and Learning Results			
Lección maxistral	Exame pregunta curta e/ou tipo test	20	A1	B1	C7	D1
			A2	B2	C8	D2
			A3	B4	C9	D3
			A5			D4
Resolución de problemas de forma autónoma	avaliarase a calidade dos traballos	40	A1	B1	C7	D1
			A2	B2	C8	D2
			A3	B4	C9	D3
			A5			D4
Resolución de problemas	Resolución de supostos prácticos	40	A1	B1	C7	D1
			A2	B2	C8	D2
			A3	B4	C9	D3
			A5			D4

Other comments on the Evaluation

Avaliación continua: Realizar as probas mencionadas anteriormente.

Avaliación global: O alumnado deberá realizar as probas non superadas, e conservarase a nota daqueles aspectos xa superados ou realizados.

Bibliografía. Fontes de información

Basic Bibliography

Complementary Bibliography

Leon, O. y Montero, I., **Métodos de investigación en psicología y educación**,

Martinez, R., **Psicometría: teoria de test psicológicos y educativos**,

Arce, C., **Técnicas de construcción de escalas psicométricas**,

Recomendacións

IDENTIFYING DATA

Observation Designs Applied to Sports Research

Subject	Observation Designs Applied to Sports Research			
Code	P02M156V01105			
Study programme	Máster Universitario en Investigación en Actividad Física, Deporte y Salud			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	3	Mandatory	1st	1st
Teaching language	Spanish Galician			
Department				
Coordinator	Gutierrez Santiago, Alfonso			
Lecturers	Gutierrez Santiago, Alfonso Prieto Lage, Iván			
E-mail	ags@uvigo.es			
Web	http://https://investigacionesobservacionales.blogspot.com/			
General description	(*)Este Curso pretende dotar ao alumnado dun coñecemento básico acerca da metodoloxía observacional co obxectivo de conseguir investigadores capaces de aplicar as distintas posibilidades desta metodoloxía e de analizar críticamente traballos de investigación que utilicen estas técnicas.			

Training and Learning Results

Code	
A1	Own and understand knowledge that provide a base or an opportunity to be original at the develop or application of ideas, often in a research context.
A2	The students known to apply the acquire knowledge and be able to solve problem in new environment or less known in wider contexts (or multidisciplinary) related with their study area.
A3	The students known to integrate knowledge and confront the complexity of formulate judgments from information that, been incomplete or limited, include reflexions about social and ethics responsibilities linked to the application of their knowledge and judgments.
A5	The students own the ability of learn to continuos studying, in wide range, on a self-directed and autonomous way.
B1	Recognize and learn the study field of physical activity, health and sports, acquiring enough of abilities and methods of researching en these areas.
B2	Be able to devise, design, put in to practice and adopt a research process rigorously academics in the physical activity, health and sports study ambit.
B4	Critically analyze, evaluate and synthesize new and complex ideas in the physical activity, health and sports study ambit.
C7	Assess, manage and combine different techniques of physical activity, health and sports sciences research.
C8	Analyze on a critically the methodological options that arise in the physical activity, health and sports study ambit.
C9	Be able to design and implement a research work in the physical activity, health and sports study ambit.
D1	Critically assess the knowledge, the technology and the available information to solve problems.
D2	Effectively communicate in academic and informative ambits ideas and concepts linked with the physical activity, health and sports studies.
D3	Be able to promote in academic and professional contexts activities to improve the technological advance, social and cultural, in physical activity, health and sports sciences field.
D4	Use basic tools of information and communication technologies (ICTs) needed for their profession exercise and for the lifelong learning.

Expected results from this subject

Expected results from this subject	Training and Learning Results			
Know and know realise a proposal of observational study applied to the investigation in the sport.	A1 A2 A3 A5	B1 B2	C8 C9	D1 D2 D3 D4
Know analyse the results and interpret them.	A1 A2 A3 A5	B1 B4	C7 C9	D2 D3 D4

Contents

Topic	
Observational methodology. Basic concepts and applications	Observational methodology. Basic concepts and applications
Observational designs	Observational designs
Phases of the process in the observational investigation	Delimitation of the aims. Collected and optimisation of data. Analysis of data. Interpretation of results.
Instruments of Register	Lince
Polar Coordinate Technique and Sequential Analysis	Polar Coordinate Technique and Sequential Analysis
Sequential analysis	T-Pattern

Planning

	Class hours	Hours outside the classroom	Total hours
Mentored work	0	50	50
Problem solving	5	0	5
Lecturing	10	0	10
Objective questions exam	0	9	9
Presentation	0	1	1

*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

Methodologies

	Description
Mentored work	The students has to develop of autonomous form the analysis and resolution of the problems and/or exercises
Problem solving	Activities in which they formulate problems and/or exercises related with the matter
Lecturing	Exhibition of the main theoretical contents of the matter with help of audiovisual means

Personalized assistance

Methodologies	Description
Lecturing	Personalised attention during the development of the master sessions. Provide the necessary didactic materials.
Mentored work	Attention to the demands of the studentes to be able to develop his autonomous work for the preparation of the work.
Problem solving	Individualized attentiona during the development of the tasks posed in the face-to-face sessions. Provide the tools and necessary software for the development of the exercises.

Assessment

	Description	Qualification	Training and Learning Results		
Mentored work	It will value the development of a practical case by means of the delivery of a tutored work compulsory.	40	B1 B2 B4	C7 C8	D1 D2 D3 D4
Problem solving	It will value the development of the tasks posed to develop in the classroom	20	B1 B2	C7 C8	D4
Lecturing	It will realise a control of assistance to the same.	10	B1 B4	C8	D1
Objective questions exam	It will value the examination type test	0	B1 B4	C7 C8	
Presentation	The defence of the practical case study developed in the compulsory tutored work will be assessed.	30	B1 B2 B4	C7 C8	D1 D2 D3 D4

Other comments on the Evaluation

The above qualification criteria are for students who attend at least 80% of the sessions, and who therefore can undergo a **CONTINUOUS EVALUATION**.

For students who do NOT attend 80% of the sessions (**GLOBAL OR NON-CONTINUOUS EVALUATION**), in order to be eligible for the highest grade, the qualification criteria will be as follows:

- Development of a practical case through the delivery and defense of a supervised work: 70%

- Test type examination: 30%.

The official dates of the exams will be available on the website of the master "Teaching. Exams".

If the subject is not passed, students will be assessed in the July exam using the GLOBAL or NON CONTINUOUS assessment system.

Sources of information

Basic Bibliography

Anguera,A.; Blanco-Villaseñor, A.; Losada, J.L., & Portell, M, **Pautas para elaborar trabajos que utilizan la metodología observacional**, 2018

ANGUERA, M.T., BLANCO, A., HERNÁNDEZ, A y LOSADA, J.L., **Diseños observacionales: ajuste y aplicación en psicología del deporte**, 2011

ANGUERA, M.T. y BLANCO-VILLASEÑOR, A., **¿Cómo se lleva a cabo un registro observacional?**, 2006

ANGUERA, M.T., BLANCO-VILLASEÑOR, A., LOSADA, J. L. y HERNÁNDEZ MENDO, A., **La metodología observacional en el deporte: Conceptos básicos**, 2000

Anguera, M.T y Hernández Mendo, A., **La metodología observacional en el ámbito del deporte**, 2013

Gutiérrez, A.; Isorna, M.; Prieto, I. & Alacid, F., **La investigación en las ciencias de la actividad física y del deporte: piragüismo**, 1º Edición, 2.0 Editora, 2011

Hernández Mendo, A., **Psicología del deporte (Vol. II): Metodología**, 1º Edición, Wanceulen, 2005

Complementary Bibliography

ANGUERA, M.T., **Manual de prácticas de observación**, 1º Edición, Trillas, 1983

ANGUERA, M.T., **Metodología de la observación en las ciencias humanas**, 1º Edición, Cátedra, 1992

ANGUERA, M.T., **Metodología observacional en la investigaciónpsicológica (Vol. I)**, 1º Edición, P.P.U., 1991

ANGUERA, M.T., BLANCO-VILLASEÑOR, A., & LOSADA, J.L., **Diseños Observacionales, cuestión clave en el proceso de la metodología observacional**, 2001

BAKEMAN, R., & QUERA, V., **Analyzing interaction: Sequential analysis using SDIS and GSEQ**, 1º Edición, Cambridge University Press, 1995

Gutiérrez-Dávila, M. y Oña, A., **Metodología en las ciencias del deporte**, 1º Edición, Sintesis, 2005

León, O. y Montero I., **Diseño de investigaciones**, 2º edición, McGraw-Hill, 1997

Recommendations

Subjects that continue the syllabus

Final Year Dissertation/P02M156V01206

Subjects that are recommended to be taken simultaneously

Exploratory Data Analysis and Inferential Analysis/P02M156V01108
Multivariate Analysis/P02M156V01109
Research Methods in Physical Activity and Sports Sciences/P02M156V01101
Experimental and Quasi-experimental Methods in Physical Activity and Sports Sciences/P02M156V01103

IDENTIFYING DATA				
Qualitative Methods in Physical Activity and Sports Sciences				
Subject	Qualitative Methods in Physical Activity and Sports Sciences			
Code	P02M156V01106			
Study programme	Máster Universitario en Investigación en Actividad Física, Deporte y Salud			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	3	Mandatory	1st	1st
Teaching language	Galician English			
Department				
Coordinator	Fernández Villarino, María de los Ángeles			
Lecturers	Fernández Villarino, María de los Ángeles			
E-mail	marianfv@uvigo.es			
Web				
General description				

Training and Learning Results	
Code	
A1	Own and understand knowledge that provide a base or an opportunity to be original at the develop or application of ideas, often in a research context.
A2	The students known to apply the acquire knowledge and be able to solve problem in new environment or less known in wider contexts (or multidisciplinary) related with their study area.
A3	The students known to integrate knowledge and confront the complexity of formulate judgments from information that, been incomplete or limited, include reflexions about social and ethics responsibilities linked to the application of their knowledge and judgments.
A5	The students own the ability of learn to continuos studying, in wide range, on a self-directed and autonomous way.
B1	Recognize and learn the study field of physical activity, health and sports, acquiring enough of abilities and methods of researching en these areas.
B2	Be able to devise, design, put in to practice and adopt a research process rigorously academics in the physical activity, health and sports study ambit.
B4	Critically analyze, evaluate and synthesize new and complex ideas in the physical activity, health and sports study ambit.
C7	Assess, manage and combine different techniques of physical activity, health and sports sciences research.
C8	Analyze on a critically the methodological options that arise in the physical activity, health and sports study ambit.
C9	Be able to design and implement a research work in the physical activity, health and sports study ambit.
D1	Critically assess the knowledge, the technology and the available information to solve problems.
D2	Effectively communicate in academic and informative ambits ideas and concepts linked with the physical activity, health and sports studies.
D4	Use basic tools of information and communication technologies (ICTs) needed for their profession exercise and for the lifelong learning.

Expected results from this subject	Training and Learning Results			
New	A1 A2	B1 B2	C7 C9	D4
New	A3 A5	B4	C8 C9	D1 D2

Contents	
Topic	
Main theoretical perspectives of the qualitative method in the sciences of the physical activity and the sport	1. Paradigms of the qualitative investigation

Principles of the method of qualitative analysis in the sciences of the physical activity and the sport.	1. Introduction to the theoretical foundations of the qualitative investigation. 2. Designs of studies and designs *muestrales. 3. Process and phases of investigation.
Methods in qualitative investigation in the sciences of the physical activity and the sport	1. Studies of case 2. Investigation-Action 3. Mixed methods
Technicians of qualitative investigation/analysis of data in the sciences of the physical activity and the sport	1. Strategies of collected of data: interview, stimulation of the memory, newspapers, *anecdotarios, etc... 2. Analysis of content. 3. Triangulation.

Planning

	Class hours	Hours outside the classroom	Total hours
Mentored work	0	50	50
Problem solving	5	0	5
Lecturing	10	0	10
Problem solving	5	0	5
Problem and/or exercise solving	2.5	0	2.5
Essay	2.5	0	2.5

*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

Methodologies

	Description
Mentored work	It developed through the face-to-face and will be related with the analysis of scientific articles
Problem solving	Activities in the that formulate problems and/or exercises related with the subject.
Lecturing	Exhibition of the main contents of the subject with help of audiovisual means.
Problem solving	(*)Actividades nas que se formulan problemas e/ou exercicios relacionados coa materia: Estudo de casos

Personalized assistance

Methodologies	Description
Problem solving	Activities in the that formulate problems and/or exercises related with the subject.
Mentored work	The guardianship of the works proposed in the classroom will develop in the face-to-face of the teaching staff.

Assessment

	Description	Qualification	Training and Learning Results			
Mentored work	It will consist in the approach and development of a project of investigation in which the methodological options are or the study of case or the investigation-action.	40	A5	B1 B2 B4	C8 C9	D2
Problem solving	It will have to see with the realisation of analysis of scientific articles of methodology investigation - action	25	A2 A3 A5	B1 B4	C7 C8	D4
Lecturing	It will value the assistance and the active participation in the face-to-face sessions. The active participation will take into account with the delivery of tasks developed in class. The no assistance to 80% of the sessions will suppose to non-overcomming of this section.	10	A1 A2 A3 A5	B1 B2	C7 C9	
Problem solving	It will have to see with the realisation of the analysis of scientific articles of methodology of study of cases	25	A2 A5	B1 B4	C7 C8	D4

Other comments on the Evaluation

CONTINUOUS: In the case of the methodology of resolution of problems, the proposal will be double. It will work an article of study of cases and another of investigation action. Each one of these works will suppose 25% of the qualification of this methodology.

GLOBAL: The students that do not surpass the matter in the first edition will have to present in the second edition all the works proposed to the long of the course. In following editions, the students will subject to the criteria of evaluation of the course in which it enrol.

Independently of the type of evaluation that make , each one of the parts will have to be surpassed to be able to contribute to the final qualification. That is to say, each section will have to reach 50% of the maximum qualification of the same. Of the same way, the no realisation of one of the proposals of the activities of evaluation, will suppose the impossibility to surpass the matter.

Sources of information
Basic Bibliography
Complementary Bibliography
Bryman, A, **Mixed methods: A four-volume set**, 2006
Creswell, J. W., & Plano Clark, V. L., **Designing and conducting mixed methods research (2nd ed.)**, 2011
Creswell, J. W., **Research Design. Qualitative, quantitative and mixed methods approaches.**, 2014
Tashakkori, A., & Teddlie, C. (Eds.), **SAGE handbook of mixed methods in social and behavioral research (2nd ed.)**, 2010
Camerino, O., Castañer, M., Anguera, T., **Mixed methods research in the movement sciences: case studies in spor, physical education and dance.**, 2012

Recommendations

IDENTIFYING DATA

Revisión Sistemática e Metaanálise

Subject	Revisión Sistemática e Metaanálise			
Code	P02M156V01107			
Study programme	Máster Universitario en Investigación en Actividade Física, Deporte e Saúde			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	3	Mandatory	1	1c
Teaching language	Galego Inglés			
Department	Didácticas especiais			
Coordinator	Romo Pérez, Vicente			
Lecturers	Romo Pérez, Vicente			
E-mail	vicente@uvigo.es			
Web				
General description	Calquera profesional, científico ou non, necesita estar actualizado no seu ámbito de coñecemento para poder tomar as mellores decisións fundamentadas na evidencia científica. A cantidade de información científica que se publica é inxente e é pouco probable que todos dispoñan do tempo, as habilidades e os recursos necesarios para identificar, avaliar e interpretar esta evidencia e incorporala ás súas decisións. As revisións sistemáticas teñen como obxectivo reunir toda a evidencia empírica que cumpre uns criterios previamente establecidos, co fin de responder unha pregunta específica de investigación. Utiliza métodos sistemáticos e explícitos, que se seleccionan co fin de minimizar rumbos, achegando así resultados máis fiables a partir dos cales se poidan extraer conclusións e tomar decisións. Moitas das revisións sistemáticas conteñen metanálisis. O metanálisis consiste na aplicación de métodos estatísticos para reunir e resumir os resultados de estudos independentes. Ao combinar a información de todos os estudos relevantes, o metanálisis pode obter estimacións máis precisas dos efectos dunha intervención, permite investigar a consistencia da evidencia entre estudos e explorar as diferenzas entre eles. Ao concluír esta materia, que pretende ser eminentemente práctica, cada alumno ou alumna debe ser capaz de: 1) Identificar cando un estudo correspóndese a unha revisión sistemática e/ou a un metaanálisis, avaliar a súa calidade e interpretar os seus resultados. 2) Elaborar, a nivel básico, unha revisión sistemática e facer un metaanálisis.			

Resultados de Formación e Aprendizaxe

Code	
A1	Posuír e comprender coñecementos que acheguen unha base ou oportunidade de ser orixinais no desenvolvemento e/ou aplicación de ideas, adoito nun contexto de investigación.
A2	Que os estudantes saiban aplicar os coñecementos adquiridos e a súa capacidade de resolución de problemas en contornos novos ou pouco coñecidos dentro de contextos máis amplos (ou multidisciplinares) relacionados coa súa área de estudo.
A3	Que os estudantes sexan capaces de integrar coñecementos e se enfrontar á complexidade de formular xuízos a partir dunha información que, sendo incompleta ou limitada, inclúa reflexións sobre as responsabilidades sociais e éticas vinculadas á aplicación dos seus coñecementos e xuízos.
A5	Que os estudantes posúan as habilidades de aprendizaxe que lles permitan continuar estudando dun xeito que terá que ser, en grande medida, autodirixido e autónomo.
B1	Coñecer e comprender o campo de estudo da actividade física, saúde e deporte, adquirindo un suficiente de habilidades e métodos de investigación en devandita área.
B2	Ser capaz de idear, deseñar, poñer en práctica e adoptar un proceso de investigación con rigor académica no ámbito de estudo da actividade física, saúde e deporte.
B4	Analizar de forma crítica, evaluar e sintetizar ideas novas e complexas no ámbito de estudo da actividade física, saúde e deporte.
C7	Valorar, manexar e combinar as diferentes técnicas de investigación nas Ciencias da Actividade Física, deporte e saúde.
C8	Analizar de xeito crítico as opcións metodológicas que se presentan no ámbito da actividade física, saúde e deporte.
C9	Ser capaz de deseñar e implementar un traballo de investigación nas Ciencias da Actividade Física e o Deporte.
D1	Valorar críticamente o coñecemento, a tecnoloxía e a información dispoñible para a resolución de problemas.
D2	Comunicar eficazmente en ámbitos académicos e divulgativos ideas e conceptos vinculados co estudos da actividade física, a saúde e o deporte.
D3	Ser capaz de promover en contextos académicos e profesionais accións destinadas ao avance tecnolóxico, social ou cultural, no ámbito das ciencias da actividade física, saúde e deporte.
D4	Utilizar as ferramentas básicas das tecnoloxías da información e as comunicacións (TIC) necesarias para o exercicio da súa profesión e para a aprendizaxe ao longo da súa vida.

Resultados previstos na materia

Expected results from this subject	Training and Learning Results			
Coñecer e saber realizar unha revisión sistematica e metaanalise	A1 A2 A3 A5	B1 B2 B4	C7 C8 C9	D1 D2 D3 D4
Saber analizar os resultados e interpretalos	A1 A2 A3 A5	B1 B2 B4	C7 C8 C9	D1 D2 D3 D4

Contidos

Topic	
A revisión sistematica	Características da revisión sistemática Análise dos datos Elaboración de táboas
Concepto e aplicacións do metaanalise	Características do metaanalise Análise dos datos Análise estatística Técnicas gráficas

Planificación

	Class hours	Hours outside the classroom	Total hours
Lección maxistral	7.5	7	14.5
Resolución de problemas	7.5	47.5	55
Exame de preguntas obxectivas	0.5	5	5.5

*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

Metodoloxía docente

	Description
Lección maxistral	Exposición dos contidos por parte do profesor/a
Resolución de problemas	Actividades nas que se formulan problemas e/ou exercicios relacionados coa materia. O alumno debe desenvolver de forma autónoma a análise e resolución dos problemas e/ou exercicios.

Atención personalizada

Methodologies	Description
Resolución de problemas	Atenderase ao alumnado para axudarlle a resolver as dúbidas durante a propias sesión presenciais e a través de titorías presenciais ou virtuais

Avaliación

	Description	Qualification	Training and Learning Results			
Lección maxistral	Asistencia e participación na discusión sobre a solución das actividades propostas	10	A1 A2 A3 A5	B1 B2 B4	C7 C8 C9	D1 D2 D3 D4
Resolución de problemas	Avaliación das actividades propostas	80	A1 A2 A3 A5	B1 B2 B4	C7 C8 C9	D1 D2 D3 D4
Exame de preguntas obxectivas	Exame tipo test	10	A2 A3	B2 B4	C7 C8 C9	D4

Other comments on the Evaluation

O apartado de Solución de problemas consiste nas seguintes actividades asociadas a cada un dos temas da materia:

- REVISIÓN SISTEMÁTICA (40% da nota final)

Desde o comezo do curso, cada alumno ou alumna terá dispoñible na aula virtual a información e temporalización sobre as tarefas que deberá desenvolver ao longo das sesións e que obrigatoriamente entregará para a súa avaliación:

1. CONTRIBUÍR Á ELABORACIÓN DOS APUNTES COLABORATIVOS.

2. BUSCAR, AVALIAR E PRESENTAR NA AULA A INFORMACIÓN DUN ARTIGO RCT SOBRE UN TEMA SELECCIONADO.

3. BUSCAR E AVALIAR UNHA REVISIÓN SISTEMÁTICA CO PROTOCOLO PRISMA. Entregarase un planilla con todos os items dos que consta a avaliación. Redactarase unha pequena reflexión crítica sobre a revisión e os seus resultados.

4. PRESENTAR Os RESULTADOS DA AVALIACIÓN ANTERIOR NA AULA.

5. ELABORAR A PRIMEIRA PARTE DUNHA METAANÁLISE. Definir un obxectivo de estudo moi concreto e ben fundamentado. Deseñar unha estratexia de procura adecuada. Definir os criterios de selección dos artigos. Facer unha valoración da calidade e do risco de sesgo dos artigos seleccionados.

6. PRESENTAR OS RESULTADOS DA PRIMEIRA PARTE DA METAANÁLISE NA AULA.

 METAANÁLISE (40% da nota final)

Cos artigos localizados na parte do curso dedicada á revisión sitemática, o alumno deberá realizar un metaanálisis co programa CMA. O alumno deberá achegar un informe que conterá as seguintes partes:

1. IDENTIFICACIÓN DOS TRABALLOS EMPREGADOS: Listaxe de artigos e identificación do/os parámetros dos mesmos a empregar no metaanálise

2. SELECCIÓN XUSTIFICADA DO TAMAÑO DO EFECTO A ANALIZAR

3. META-ANÁLISE. Deberá incluírse, tanto para o modelos de efectos fixos como aleatorios, Forest plot; p-valores de traballos individuais e do efecto resumen; límites inferiores e superiores dos intervalos de confianza de efectos individuais; peso de cada traballo; estatísticos de homogeneodad (Q, I e T^2)

4. INTERPRETACIÓN DA METANÁLISE. Conclusións respecto a análise realizada tanto no referido ao resultado final como no concernente á homoxeneidade dos efectos. Así mesmo incluirase algunha reflexión respecto ao contraste entre o resultado obtido baixo o modelo de eefctos fixos e o modelo de efectos aleatorios.

En canto ao apartado de Sesión maxistral (asistencia), poderarase en función da porcentaxe de asistencia e participación activa.

A materia considérase superada cando a nota final (media ponderada dos diferentes apartados) sexa maior ou igual ao 50% da máxima nota posible (5 sobre 10).

Os diferentes apartados superados serán conservados en oportunidades sucesivas. Na segunda oportunidade de cada convocatoria, o alumnado só poderá optar á avaliación de calquera dos apartados da metodoloxía "Solución de problemas" e da "Proba Obxectiva".

Bibliografía. Fontes de información

Basic Bibliography

Egger M, Davey-Smith G, Altman D, **Systematic reviews in health care. Meta-analysis in context**, .BMJ books, 2007

Higgins J, Green, **Manual Cochrane de revisiones sistemáticas de intervenciones. The Cochrane Collaboration**, The Cochrane Collaboration, 2011

Liberati A, Altman DG, Tetzlaff J, Mulrow C, Gøtzsche PC, Ioannidis JP, et al., **The PRISMA Statement for Reporting Systematic Reviews and Meta-Analyses of Studies That Evaluate Health Care Interventions: Explanation and Elaboration.**, Annals of Internal Medicine, 2009

Complementary Bibliography

Armijo S, Gazzi L, Gadotti I, Fuentes J, Stanton T, Magee D, **Scales to Assess the Quality of Randomized Controlled Trials: A Systematic Review**, Physical Therapy, 2008

Borenstein M, Hedges L, Higgins J, Rothstein H, **Introduction to Meta-Analysis.**, Wiley, 2009

Botella-Ausina J, Sánchez-Meca J, **Meta-análisis en ciencias sociales y de la salud.**, Síntesis, 2015

Cummings G, **Understanding The New Statistics: Effect Sizes, Confidence Intervals, and Meta-Analysis**, Routledge, 2011

Recomendacións

IDENTIFYING DATA

Análise Exploratoria de Datos e Análise Inferencial

Subject	Análise Exploratoria de Datos e Análise Inferencial			
Code	P02M156V01108			
Study programme	Máster Universitario en Investigación en Actividade Física, Deporte e Saúde			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	4	Mandatory	1	1c
Teaching language	Galego			
Department	Didácticas especiais			
Coordinator	Romo Pérez, Vicente			
Lecturers	Romo Pérez, Vicente			
E-mail	vicente@uvigo.es			
Web				
General description	A materia "Análise exploratoria de datos e análises inferencial" é unha aproximación á análise estatística univariante. Abórdanse desde os procesos descritivos máis básicos ata os principios da estatística inferencial. Ao longo da materia o alumno coñecerá os fundamentos teóricos destes procedementos así como a súa aplicación práctica mediante diferentes programas informáticos como SPSS e R.			

Resultados de Formación e Aprendizaxe

Code	
A1	Posuír e comprender coñecementos que acheguen unha base ou oportunidade de ser orixinais no desenvolvemento e/ou aplicación de ideas, adoito nun contexto de investigación.
A2	Que os estudantes saiban aplicar os coñecementos adquiridos e a súa capacidade de resolución de problemas en contornos novos ou pouco coñecidos dentro de contextos máis amplos (ou multidisciplinares) relacionados coa súa área de estudo.
A3	Que os estudantes sexan capaces de integrar coñecementos e se enfrontar á complexidade de formular xuízos a partir dunha información que, sendo incompleta ou limitada, inclúa reflexións sobre as responsabilidades sociais e éticas vinculadas á aplicación dos seus coñecementos e xuízos.
A5	Que os estudantes posúan as habilidades de aprendizaxe que lles permitan continuar estudando dun xeito que terá que ser, en grande medida, autodirixido e autónomo.
B1	Coñecer e comprender o campo de estudo da actividade física, saúde e deporte, adquirindo un suficiente de habilidades e métodos de investigación en devandita área.
B2	Ser capaz de idear, deseñar, poñer en práctica e adoptar un proceso de investigación con rigor académica no ámbito de estudo da actividade física, saúde e deporte.
B4	Analizar de forma crítica, evaluar e sintetizar ideas novas e complexas no ámbito de estudo da actividade física, saúde e deporte.
C10	Manexar paquetes informáticos para a introdución e análise dos datos recolleitos no ámbito da actividade física, saúde e deporte.
C11	Ser capaz de seleccionar de forma correcta os modelos de análises de datos apropiados para os deseños de investigación máis utilizados no ámbito da actividade física, saúde e deporte.
C12	Coñecer e utilizar de forma efectiva os procedementos necesarios para realizar a depuración inicial e a análise descriptivo dos datos.
C13	Executar as técnicas de análise estatística máis utilizadas na investigación do ámbito no ámbito da actividade física, saúde e deporte.
D1	Valorar críticamente o coñecemento, a tecnoloxía e a información dispoñible para a resolución de problemas.
D2	Comunicar eficazmente en ámbitos académicos e divulgativos ideas e conceptos vinculados co estudos da actividade física, a saúde e o deporte.
D3	Ser capaz de promover en contextos académicos e profesionais accións destinadas ao avance tecnolóxico, social ou cultural, no ámbito das ciencias da actividade física, saúde e deporte.
D4	Utilizar as ferramentas básicas das tecnoloxías da información e as comunicacións (TIC) necesarias para o exercicio da súa profesión e para a aprendizaxe ao longo da súa vida.

Resultados previstos na materia

Expected results from this subject	Training and Learning Results

· Coñecer e saber utilizar as técnicas de análises exploratorio dunha base de datos.	A1	B1	C10	D1
· Coñecer e saber realizar un contraste de hipótese.	A2	B2	C11	D2
· Saber analizar os resultados e interpretalos.	A3	B4	C12	D3
	A5		C13	D4

Contidos

Topic	
Análise *exploratorio de datos nas ciencias da actividade física e o deporte:	Depuración e análise de datos. · Tratamento de valores perdidos. · Estatística descritiva: unidades de posición, de tendencia central, de dispersión e de forma. Representacións gráficas.
Análise de datos inferencial nas ciencias da actividade física e o deporte:	· Relación entre variables: correlación e regresión. · Contraste de hipótese. · Técnicas paramétricas e non paramétricas

Planificación

	Class hours	Hours outside the classroom	Total hours
Lección maxistral	15	2	17
Resolución de problemas	5	70	75
Exame de preguntas obxectivas	0	8	8
*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.			

Metodoloxía docente

	Description
Lección maxistral	Exposición dos principais contidos teóricos da materia con axuda de medios audiovisuais.
Resolución de problemas	Actividades nas que se formulan problemas e/ou exercicios relacionados coa materia.

Atención personalizada

Methodologies	Description
Resolución de problemas	Actividades nas que se formulan problemas e/ou exercicios relacionados coa materia.

Avaliación

	Description	Qualification	Training and Learning Results			
Lección maxistral	Exámen tipo test que consiste en expor unha cuestión en forma de pregunta directa ou de afirmación incompleta, e varias opcións ou alternativas de resposta que proporcionan posibles solucións, das que só una delas é válida. O exame presentarase ao alumno redactado no idioma de impartición da materia (isto é castelán). Se algún alumno desexa unha copia do mesmo no outro idioma oficial da UDC, deberá solicitalo ao profesor coordinador unha semana antes da data de realización	20	A1 A2 A3 A5	B1 B2 B4	C10 C11 C12 C13	D1 D2 D3 D4
Resolución de problemas	Avaliación dos traballos e actividades	80	A1 A2 A3 A5	B1 B2 B4	C10 C11 C12 C13	D1 D2 D3 D4
Exame de preguntas obxectivas	É o apartado 1	0				

Other comments on the Evaluation

A avaliación do apartado de solución de problemas consistirá na elaboración e desenvolvemento de 3 supostos prácticos. No primeiro deles os/-as estudantes deberán facer unha anális descriptiva dunha base de datos. No segundo dos supostos o alumnado deberá resolver diferentes tarefas relacionadas cos fundamentos da inferencia estatística así coma un análisi de asociación entre variables cuantitativas. A tercera das tarefas conlevará a aplicación de diferentes probas tanto paramétricas coma non paramétricas. O primeiro suposto representa un 20% da calificación deste apartado, mentres que o segundo e terceiro suposto ponderan cada un, un 40% da calificación neste apartado.

A proba de resposta múltiple consitirá nun cuestionario tipo test, con 5 posibles alternativas das cales unha sóla será correcta. Restarase unha resposta correcta por cada 4 incorrectas

A materia será superado cando a suma das calificación ponderadas dos dos apartados sexa igual ou superior a 5 nunha escala 0-10.

Os diferentes apartados superados serán conservados en oportunidades sucesivas.

Todo o anteriormente exposto é de aplicación tanto para alumnos con matrícula a tempo completo como a tempo parcial.

A realización fraudulenta de proba ou actividades de avaliación implicará a cualificación de suspenso na convocatoria en que se cometa a falta e respecto da materia en que se cometese: o/a estudante será cualificado con "suspenso" (nota numérica 0) na convocatoria correspondente do curso académico, tanto se a comisión da falta se produce na primeira oportunidade como na segunda. Para isto, procederase a modificar a súa cualificación na acta de primeira oportunidade, se fose necesario (Regulamento disciplinar do estudantado da UDC, art. 11, apdo 4 b). Entenderase por fraude académica calquera comportamento premeditado tendente a falsear os resultados dun exame ou traballo, propio ou alleo, realizado como requisito para superar unha materia ou acreditar o rendemento académico (Lei 3/2022, do 24 de febreiro, de convivencia universitaria; art. 11, apdo g).

Bibliografía. Fontes de información

Basic Bibliography

Complementary Bibliography

Ferrán Aranaz, Magdalena, **SPSS para Windows. Análisis estadístico**, McGraw-Hill,

Field, Andy, **Discovering Statistics Using SPSS (Introducing Statistical Methods Series).**, Londres: SAGE,

García-Pérez, Alfonso., **Estadística Básica con**,

Ferrán Aranaz, Magdalena., **SPSS para Windows: programación y análisis estadístico.**,

Recomendacións

IDENTIFYING DATA				
Multivariate Analysis				
Subject	Multivariate Analysis			
Code	P02M156V01109			
Study programme	Máster Universitario en Investigación en Actividad Física, Deporte y Salud			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	5	Mandatory	1st	1st
Teaching language	Spanish			
Department				
Coordinator	Iglesias Pérez, María Carmen			
Lecturers	Iglesias Pérez, María Carmen			
E-mail	mcigles@uvigo.es			
Web				
General description	Knowledge and application of major multivariante statistical techniques which include multiple regression, discriminant analysis and factor analysis.			

Training and Learning Results	
Code	
A1	Own and understand knowledge that provide a base or an opportunity to be original at the develop or application of ideas, often in a research context.
A2	The students known to apply the acquire knowledge and be able to solve problem in new environment or less known in wider contexts (or multidisciplinary) related with their study area.
A3	The students known to integrate knowledge and confront the complexity of formulate judgments from information that, been incomplete or limited, include reflexions about social and ethics responsibilities linked to the application of their knowledge and judgments.
A5	The students own the ability of learn to continuos studying, in wide range, on a self-directed and autonomous way.
B1	Recognize and learn the study field of physical activity, health and sports, acquiring enough of abilities and methods of researching en these areas.
B2	Be able to devise, design, put in to practice and adopt a research process rigorously academics in the physical activity, health and sports study ambit.
B4	Critically analyze, evaluate and synthesize new and complex ideas in the physical activity, health and sports study ambit.
C10	Manage software packages for the introduction and data analyze collected in the physical activity, health and sports study ambit.
C11	Be able to select on a correct way the analyze model and appropriate data for the research design most used in the physical activity, health and sports study ambit.
C12	Known and used on a correct way the necessary procedures to perform the initial treatment and the data descriptive analyze.
D1	Critically assess the knowledge, the technology and the available information to solve problems.
D2	Effectively communicate in academic and informative ambits ideas and concepts linked with the physical activity, health and sports studies.
D3	Be able to promote in academic and professional contexts activities to improve the technological advance, social and cultural, in physical activity, health and sports sciences field.
D4	Use basic tools of information and communication technologies (ICTs) needed for their profession exercise and for the lifelong learning.

Expected results from this subject	Training and Learning Results			
To know and use the techniques of multivariate data analysis.	A1	B1	C10	D1
	A2	B2	C11	D2
	A3		C12	D3
	A5			D4
To know how to analyze and interpret the results.	A1	B1	C10	D1
	A2	B2	C11	D2
	A3	B4	C12	D3
	A5			D4

Contents
Topic

1. Multivariate methods I.	- Simple andr Multiple linear regression - Logistic regression - Discriminant analysis
2. Multivariate methods II.	- Principal Component Analysis - Factor analysis - Multidimensional scaling

Planning

	Class hours	Hours outside the classroom	Total hours
Lecturing	10	10	20
Practices through ICT	15	15	30
Autonomous problem solving	0	15	15
Mentored work	0	50	50
Objective questions exam	1	9	10

*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

Methodologies

	Description
Lecturing	Explanation of the major concepts about each multivariate statistical technique.
Practices through ICT	Application of multivariate techniques to data sets with SPSS or similar software.
Autonomous problem solving	Written presentation of the activities and exercises proposed in the computer classes.
Mentored work	The student will propose and conduct a work about statistical analysis of a real data set by using one or more of multivariate techniques of matter. The work will be done individually or in small groups.

Personalized assistance

Methodologies	Description
Mentored work	Resolution of doubts by using the Moodle platform, email or tutoring hours with the professor. Tutoring may be carried out by telematic means by appointment. - Virtual offices of professors in Remote Campus: https://campusremotouvigo.gal/faculty/993 Mª Carmen Iglesias Pérez: Office 1291 - Ask for an appointment using email: mcigles@uvigo.es

Assessment

	Description	Qualification	Training and Learning Results			
Autonomous problem solving	Practical activities carried out continuously.	20	A1 A2 A3 A5	B1 B2 B4	C10 C11 C12	D1 D2 D3 D4
Mentored work	It is necessary a minimum of 4 on 10 so that it was evaluable.	40	A1 A2 A3 A5	B1 B2 B4	C10 C11 C12	D1 D2 D3 D4
Objective questions exam	Face-to-face test examination. To consult the material of the matter is possible. It is necessary a minimum of 4 on 10 so that it was evaluable.	40	A1 A5	B1	C11	D1

Other comments on the Evaluation

Continuous assessment

The project with real data will be 40% of the score.

The test exam will be another 40%.

In each one of these two parts is necessary to reach 4 out of 10.

The minimum weighted average to pass the subject is 5 out of 10.

The reports or activities of practices will be 20% of the score. The mark of these practical activities is maintained in the second announcement.

Global assessment

Theory and exercises exam.

Sources of information

Basic Bibliography

Hair, J.F., Anderson, R.E., Tatham, R.L. y Black, W.C., **Análisis Multivariante**, 5ª, Madrid: Prentice Hall, 2000

Guisande, C. Vaamonde, A. y Barreiro,A., **Tratamiento de datos con R, Statistica y SPSS**, Diaz de Santos, 2011

Complementary Bibliography

Thomas, J.R. y Nelson, J.K., **Métodos de investigación en Actividad Física**, Paidotribo, 2007

Pérez López, C., **Técnicas de análisis multivariante de datos: Aplicaciones con SPSS**, Madrid: Pearson Prentice Hall, 2004

Visauta, B. y Martori, J.C., **Análisis estadístico con SPSS para Windows (vol. II). Estadística Multivariante**, Madrid: McGraw-Hill, 2003

Camacho, J., **Estadística con SPSS (versión 12) para Windows**, Madrid: Ra-Ma, 2005

Arce, C. y Real, E., **Introducción al Análisis Estadístico con SPSS para Windows**, Barcelona: PPU, 2001

Gardner, R., **Estadística para psicología usando SPSS**, Madrid : Pearson, 2003

Abraira, V. y Pérez de Vargas, A., **Métodos Multivariantes en Bioestadística**, Madrid: Centro de Estudios Ramón Areces, 1996

Catena, A., Ramos, M. y Trujillo, H., **Análisis multivariado. Un manual para investigadores**, Madrid: Biblioteca Nueva, 2003

Mateos- Aparicio,G. y Hernández, A., **Análisis multivariante de datos : cómo buscar patrones de comportamiento en Big Data**, Madrid : Pirámide, 2021

Aldás Manzano, J., **Análisis multivariante aplicado con R**, Madrid : Alfacentauro, 2017

Cea, M.A., **Análisis multivariable. Teoría y práctica en la investigación social**, Madrid: Síntesis, 2002

Everitt, B. y Dunn, G., **Applied Multivariate Data Analysis**, 2ª, Wiley, 2001

Landau, S y Everitt, B., **A Handbook of statistical analyses using SPSS**, Boca Raton (Florida): Chapman & May, 2004

Ho, R., **Handbook of univariate and multivariate data analysis and interpretation with SPSS**, Boca Raton (Florida): Chapman & Hall, 2006

Recommendations

Subjects that it is recommended to have taken before

Exploratory Data Analysis and Inferential Analysis/P02M156V01108

IDENTIFYING DATA				
Exercise and Physical Condition in Performance and Health				
Subject	Exercise and Physical Condition in Performance and Health			
Code	P02M156V01201			
Study programme	Máster Universitario en Investigación en Actividad Física, Deporte y Salud			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	20	Optional	1st	2nd
Teaching language	Spanish Galician			
Department				
Coordinator	Cancela Carral, José María			
Lecturers	Cancela Carral, José María Serrano Gómez, Virginia			
E-mail	chemacc@uvigo.es			
Web	http://www.healthyfit.es			
General description	(*)Analise do método científico e a súa aplicación no ambito da activdiade física saudabel e do deporte			

Training and Learning Results	
Code	
A3	The students known to integrate knowledge and confront the complexity of formulate judgments from information that, been incomplete or limited, include reflexions about social and ethics responsibilities linked to the application of their knowledge and judgments.
C2	Develop scientific thoughts capacity to research in the physical activity, health and sports study ambit.
C6	Be able to analyze organized, select, classify and compile information about physical activity, health and sports study ambit.
C10	Manage software packages for the introduction and data analyze collected in the physical activity, health and sports study ambit.
C11	Be able to select on a correct way the analyze model and appropriate data for the research design most used in the physical activity, health and sports study ambit.
C13	Execute the most used statistical analyzed technique of the physical activity, health and sports research.
C16	Be able to incorporated new technologies and integrate knowledge from other professional and scientific ambits.
D4	Use basic tools of information and communication technologies (ICTs) needed for their profession exercise and for the lifelong learning.

Expected results from this subject	Training and Learning Results		
Know and know use the technicians of investigation on exercise and physical condition in the field of the performance and the health	A3	C2 C6 C10 C11 C13 C16	D4

Contents	
Topic	
The scientific method in the study of the exercise and the physical condition in the field of the performance and the health.	Peculiarities of the scientific method in the study of the exercise and of the physical condition in the sportive performance Peculiarities of the scientific method in the study of the exercise and of the physical condition in the health
Designs of investigation for the analysis of the physical exercise and the physical condition in the fields of the performance and of the health.	Designs of investigation of effect of the exercise and the physical condition in the performance Designs of investigation of effect of the exercise and the physical condition in the performance

Implementation of a design for the analysis of the physical exercise and the physical condition in the fields of the performance and of the health.	Implementation of a design of investigation for the analysis of the physical exercise and the physical condition in the performance Implementation of a design of investigation for the analysis of the physical exercise and the physical condition in the health
Collected and processing of corresponding data to a design for the analysis of the physical exercise and the physical condition in the fields of the performance and of the health.	Collected and processing of data in a design of investigation in the field of the performance Collected and processing of data in a design of investigation in the field of the health
Oral communication and written of a design for the analysis of the physical exercise and the physical condition in the fields of the performance and of the health.	Oral communication and written of a design of investigation of analysis of the exercise and the physical condition in the performance Oral communication and written of a design of investigation of analysis of the exercise and the physical condition in the health

Planning			
	Class hours	Hours outside the classroom	Total hours
Lecturing	6	30	36
Laboratory practical	70	150	220
Seminars	6	15	21
Debate	6	15	21
Flipped Learning	12	30	42
Autonomous problem solving	0	100	100
Problem and/or exercise solving	1	20	21
Essay	1	20	21
Essay	1	17	18
*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.			

Methodologies	
	Description
Lecturing	Exhibition of the main theoretical contents of the matter with help of audiovisual means.
Laboratory practical	Realisation practises of experimental procedures (collected and management of data) and training in the handle of instruments of investigation.
Seminars	Resolution of doubts and follow-up of works
Debate	Meetings and activities of group of investigation to tackle the different projects and initiatives in course: follow-ups of experiments, analysis of articles, exhibition of of works (communications in congresses, articles in preparation)
Flipped Learning	The student will receive through the platform of *teledocencia *faitic documentation so that it can work on her and later can pose to the professor doubt or problems of learning related with these contents
Autonomous problem solving	Development of partial works on the development and the resolution of problems of a design of investigation, collected of data, analysis and report of the results, as well as oral communication and written of the same

Personalized assistance	
Methodologies	**Description**
Lecturing	The student will receive personalized attention at the time designated for it in each academic year. Agreed tutorials will also be established to monitor and control their activity of the theoretical contents within the subject. The tutorials or meetings will be held either in person or through virtual modality, either through the virtual offices of the teachers (1006, prof. Dr. Oscar García García), or by email or through the forums of the tele-teaching platform Moovi.
Laboratory practical	The student will receive personalized attention at the time designated for it in each academic year. Agreed tutorials will also be established to monitor and control their activity of the theoretical contents within the subject. The tutorials or meetings will be held either in person or through virtual modality, either through the virtual offices of the teachers (1006, prof. Dr. Oscar García García), or by email or through the forums of the tele-teaching platform Moovi.
Seminars	The student will receive personalized attention at the time designated for it in each academic year. Agreed tutorials will also be established to monitor and control their activity of the theoretical contents within the subject. The tutorials or meetings will be held either in person or through virtual modality, either through the virtual offices of the teachers (1006, prof. Dr. Oscar García García), or by email or through the forums of the tele-teaching platform Moovi.

Assessment

	Description	Qualification	Training and Learning Results		
Problem and/or exercise solving	The proof will consist in a battery of ten questions of short answer, on all the contents impartidos in the subject	25	A3	C2 C6	
Essay	The work will consist in realizing a design of investigation envelope an original subject in the exercise and physical condition in the field of it greet or of the performance, establishing a *posicionamiento envelope the subject to treat through the references in the literature, pointing out objective, hypothesis and developing the method that would owe carry out to do reality the design of investigation. Theoretical contents	35	A3	C2 C6 C10 C11 C13 C16	D4
Essay	The work will consist in realizing a design of investigation envelope an original subject in the exercise and physical condition in the field of it greet or of the performance, establishing a envelope the subject to treat through the references in the literature, pointing out objective, hypothesis and developing the method that would owe carry out to do reality the design of investigation practical Contents	40	A3	C2 C6 C10 C11 C13 C16	D4

Other comments on the Evaluation

Continuous assessment. It will be essential to pass the subject:
1. Attend at least 80% of the classes.
1. Obtain a minimum of 5 points in each of the three assessment tests described above.
2. Present in due time and form the different works related to the contents of the subject.
3. Present and defend the tutored work in the classroom.
Global Evaluation: It will be carried out when the student does not meet any of the points of the continuous evaluation. This Global evaluation will consist of presenting and defending the tutored work and carrying out a practical theoretical exam on the contents of the subject. To pass the subject it will be necessary to pass each of the parts with a 5.
If you have not passed the subject in the first call, the skills not acquired will be evaluated in the July call.
Only the grade of the part approved for the second call of the same academic year will be saved.
The official dates of the exams can be consulted on the faculty website at the link:
http://fcced.uvigo.es/gl/docencia/exames
For the rest of the calls, the same criteria as the June call are applied.

Sources of information

Basic Bibliography

Nacleiro, F., **Entrenamiento Deportivo: fundamentos y aplicaciones en diferentes deportes**, 1ª, medica panamericana., 2011

Tomas, J.R. y Nelson , J.K., **Métodos de investigación en actividad física**, 1, Paidotribo, 2006

Polit, DF, **Investigación científica en ciencias de la salud : Principios y métodos**, 1ª, McGraw-Hill, 2000

Complementary Bibliography

Hohmann, A., Lames, M., y Letzeier, M., **Introducción a la ciencia del entrenamiento**, 1ª, Paidotribo, 2005

McGarry, T.; O´Donogue, P. y Sampaio, J., **Handbook of Sports performance analysis**, 1, Routledge, 2013

Narváez, V. P. D., **Metodología de la investigación científica y bioestadística: para médicos, odontólogos y estudiantes de ciencias de la salud**, 1ª, RIL, 2009

Recommendations

Subjects that it is recommended to have taken before

Multivariate Analysis/P02M156V01109
Observation Designs Applied to Sports Research/P02M156V01105
Research Methods in Physical Activity and Sports Sciences/P02M156V01101
Qualitative Methods in Physical Activity and Sports Sciences/P02M156V01106
Experimental and Quasi-experimental Methods in Physical Activity and Sports Sciences/P02M156V01103
Selective Correlational Methodology/P02M156V01104
Systematic Review and Meta-analysis/P02M156V01107

IDENTIFYING DATA				
Learning and Motor Control				
Subject	Learning and Motor Control			
Code	P02M156V01202			
Study programme	Máster Universitario en Investigación en Actividad Física, Deporte y Salud			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	20	Optional	1st	2nd
Teaching language	Spanish Galician			
Department				
Coordinator	García Soidan, José Luís			
Lecturers	García Soidan, José Luís Pazos Couto, Jose Maria Romo Pérez, Vicente			
E-mail	jlsoidan@uvigo.es			
Web				
General description	(*)A materia Aprendizaxe e control motor ten como principal obxectivo aproximar ao alumno ao proceso de investigación do movemento humanos desde a perspectiva da adquisición e regulación dos procesos motores. Trátase dunha materia optativa á que o estudante accede tras unha primeira etapa de formación obrigatoria na que adquiriría coñecementos e competencias para intervir nun proceso de investigación. Desde esta premisa, a materia ten un enfoque eminentemente procedemental e aplicado, onde o alumno aproximarase á dinámica dun grupo de investigación, implicándose nas diferentes tarefas e procedementos. En definitiva, preténdese que o estudante desenvolva un proceso de prácticas de investigación que lle permitan implementar nun contexto real as competencias adquiridas na formación obrigatoria.			

Training and Learning Results	
Code	
A1	Own and understand knowledge that provide a base or an opportunity to be original at the develop or application of ideas, often in a research context.
A3	The students known to integrate knowledge and confront the complexity of formulate judgments from information that, been incomplete or limited, include reflexions about social and ethics responsibilities linked to the application of their knowledge and judgments.
A5	The students own the ability of learn to continuos studying, in wide range, on a self-directed and autonomous way.
B1	Recognize and learn the study field of physical activity, health and sports, acquiring enough of abilities and methods of researching en these areas.
B2	Be able to devise, design, put in to practice and adopt a research process rigorously academics in the physical activity, health and sports study ambit.
B4	Critically analyze, evaluate and synthesize new and complex ideas in the physical activity, health and sports study ambit.
C2	Develop scientific thoughts capacity to research in the physical activity, health and sports study ambit.
C4	Show link attitudes with excellence habits, ethical commitment and quality in the research exercise physical activity, health and sports study ambit
C5	Known and dominant the information search procedures and tools, both en primary and secondary sources in physical activity, health and sports.
C6	Be able to analyze organized, select, classify and compile information about physical activity, health and sports study ambit.
C7	Assess, manage and combine different techniques of physical activity, health and sports sciences research.
C9	Be able to design and implement a research work in the physical activity, health and sports study ambit.
C10	Manage software packages for the introduction and data analyze collected in the physical activity, health and sports study ambit.
C11	Be able to select on a correct way the analyze model and appropriate data for the research design most used in the physical activity, health and sports study ambit.
C13	Execute the most used statistical analyzed technique of the physical activity, health and sports research.
C16	Be able to incorporated new technologies and integrate knowledge from other professional and scientific ambits.
C17	Be able to participate in research projects in the physical activity and sports science ambit.
D1	Critically assess the knowledge, the technology and the available information to solve problems.
D2	Effectively communicate in academic and informative ambits ideas and concepts linked with the physical activity, health and sports studies.
D3	Be able to promote in academic and professional contexts activities to improve the technological advance, social and cultural, in physical activity, health and sports sciences field.

D4 Use basic tools of information and communication technologies (ICTs) needed for their profession exercise and for the lifelong learning.

Expected results from this subject	Training and Learning Results			
1. Capacity to develop the scientific thought to the hour to tackle the investigation in the field of the learning and control engine	A1 A3 A5	B1 B2 B4 B5 B5 B5 B5	C2 C4 C6 C9 C13	D1 D2 D5 D5 D5
2. Capacity to value critically the knowledge, the technology and the available information to detect ideas and problems related with the learning and control engine.	A1 A3 A5	B1 B5 B2 B5	C23 C2 C4 C5 C7 C23 C10 C11 C16 C17	D1 D5 D2 D5 D3 D5 D4 D5
3. Capacity to develop and incorporate new technologies and integrate knowledges related with the learning and control engine.	A1 A3 A5	B2	C2 C4 C5 C7 C9 C10 C11 C13 C17	D1 D2 D3 D4

Topic	
The scientific method in the study of the learning and of the control engine	The scientific method in the study of the learning and of the control engine
Designs of investigation for the analysis of the learning and of the control engine	Designs of investigation for the analysis of the learning and of the control engine
Implementation of a design for the analysis of the learning and of the control engine	Implementation of a design for the analysis of the learning and of the control engine
Collected and processing of corresponding data to a design for the analysis of the learning and of the control engine	Collected and processing of corresponding data to a design for the analysis of the learning and of the control engine
Oral communication and written of a design for the analysis of the learning and of the control engine	Oral communication and written of a design for the analysis of the learning and of the control engine

	Class hours	Hours outside the classroom	Total hours
Lecturing	10	50	60
Seminars	15	15	30
Seminars	15	15	30
Mentored work	0	260	260
Presentation	0	10	10
Laboratory practical	60	50	110

*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

	Description
Lecturing	Exhibition of the contents of the subject with audiovisual support. In spite of the concrete characteristics of this methodology, will look for the active implication of the student, as well as the significance of the learnings

Seminars	It will consist in the analysis of articles referred to the study of the learning and of the control engine. It will put special emphasis in the study of works in English tongue of included publications in JCR. It engages an important work of the student, the one who will analyse the documentation,contributed by the professor or located by the own student, for later proceed to his discussion. Likewise they include the tasks of bibliographic review required for the preparation of the corresponding section of the work *tutelado
Seminars	Resolution of doubts and follow-up of works
Mentored work	It will consist in the preparation of a memory of the face-to-face activities and no face-to-face carried out. Of the first the student will elaborate a newspaper detailed and reflexive of the tasks realised: sessions, practices of laboratory, meetings of group of investigation and work in reduced groups. With regard to the second, the student will have to realise a description detailed of the no face-to-face work required: bibliographic research carried out, treatment and management of data, preparation of the memory etc. The students will be able to incorporate the evidences of each one of the activities that consider timely (documents, slides etc). The memory will contain at least the following sections: -Daily/description of the face-to-face activities with justification of the hours of work filled -Description of the no face-to-face activities developed -Resulted of a bibliographic review. Said procedure will have been directed to the preparation of the work and to the preparation of the design of investigation that will include in the present memory. The student in this section simply will present the results of the research: databases consulted, key words employees, number of initial references, inclusion/exclusion criteria and listing of references finally selected -Design of investigation. Will have to elaborate a project of investigation in the field of study of the subject.
Presentation	Analysis of the oriented work, with special emphasis in the exhibition of design of investigation
Laboratory practical	Realisation practises of experimental procedures (collected and management of data) and training in the handle of instruments of investigation

Personalized assistance

Methodologies	Description
Mentored work	Any one of the methodology posed will require in his development of personalised attention. Nevertheless, the oriented work by it structure will require the systematic development of *tutoría individual with the following content: - Explanation of the structure of the memory - Selection of the thematic of the bibliographic research and of the design of investigation - Structuring of the memory in his sections of face-to-face activities and no face-to-face - Supervision of the results of the bibliographic research - Supervision of the design of investigation. Will carry out a first interview to establish the structure of the presentation and a second session of orientation to supervise the formal appearances of the same

Assessment

	Description	Qualification	Training and Learning Results			
Lecturing	(*)Preguntas tipo test ou preguntas curtas	20	A1 A3 A5	B1 B2	C6 C9	D2 D3 D4
Seminars	The student will have to accumulate at least 70% of the face-to-face load in this section	20	A1 A3 A5	B1 B4	C2 C4 C5 C9 C10 C11 C13 C16	D1 D2 D3 D4
Mentored work	They will value the following appearances: Quality of the formal presentation Rigour and precision in the register of the activities realised bibliographical research and adjusted Quality of the design of investigation: originality, feasibility and level of concretion.	40	A1 A3 A5	B1 B4	C2 C4 C5 C9 C10 C11 C13 C16	D1 D2 D3 D4

Laboratory practical	The student will have to accumulate at least 70% of the face-to-face load in this section	20	A1 A3 A5	B1 B2 B4	C2 C4 C5 C6 C7 C9 C10 C11 C13 C16 C17	D1 D2 D3 D4

Other comments on the Evaluation

To pass the course will be essential to achieve the fit and in the protected work. l To take place unless a change in the evaluation system , the grade obtained in the different sections will be retained in future opportunities. At every opportunity , the not attend any of the sections of the pending evaluation of improvement, and are required to obtain the suitable in the subject (supervised work) will involve the student's grade as not presented.

Sources of information

Basic Bibliography

Complementary Bibliography

Shumway-Cook & Woollacott, **Motor Control: Translating Research Into Clinical Practice**, Lippincott Williams Wilkins,, 2016

Magill, R. A., **Motor Learning and Control: Concepts and Applications**, 11 ª New York: McGraw-Hill., 2016

Latash, M., **Fundamentals of Motor Control**, Academic Press, 2012

Schmidt R; Lee T., **Motor Control and Learning**, Human Kinetics, 2011

Vickers, **Percepcion cognition and decision training**, Human Kinetics, 2007

Recommendations

IDENTIFYING DATA				
Research in Physical Education, Physical Activity and Sports				
Subject	Research in Physical Education, Physical Activity and Sports			
Code	P02M156V01203			
Study programme	Máster Universitario en Investigación en Actividad Física, Deporte y Salud			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	20	Optional	1st	2nd
Teaching language	Spanish Galician			
Department				
Coordinator	Fernández Villarino, María de los Ángeles			
Lecturers	Fernández Villarino, María de los Ángeles			
E-mail	marianfv@uvigo.es			
Web				
General description				

Training and Learning Results	
Code	
B1	Recognize and learn the study field of physical activity, health and sports, acquiring enough of abilities and methods of researching en these areas.
B2	Be able to devise, design, put in to practice and adopt a research process rigorously academics in the physical activity, health and sports study ambit.
B4	Critically analyze, evaluate and synthesize new and complex ideas in the physical activity, health and sports study ambit.
C2	Develop scientific thoughts capacity to research in the physical activity, health and sports study ambit.
C4	Show link attitudes with excellence habits, ethical commitment and quality in the research exercise physical activity, health and sports study ambit
C5	Known and dominant the information search procedures and tools, both en primary and secondary sources in physical activity, health and sports.
C6	Be able to analyze organized, select, classify and compile information about physical activity, health and sports study ambit.
C7	Assess, manage and combine different techniques of physical activity, health and sports sciences research.
C9	Be able to design and implement a research work in the physical activity, health and sports study ambit.
C10	Manage software packages for the introduction and data analyze collected in the physical activity, health and sports study ambit.
C11	Be able to select on a correct way the analyze model and appropriate data for the research design most used in the physical activity, health and sports study ambit.
C13	Execute the most used statistical analyzed technique of the physical activity, health and sports research.
C16	Be able to incorporated new technologies and integrate knowledge from other professional and scientific ambits.
C17	Be able to participate in research projects in the physical activity and sports science ambit.
C20	Develop on an efficient manner own homework□s of the design, implementation, analyzed and publish work related wit the physical educational research, physical activity and sports.
D1	Critically assess the knowledge, the technology and the available information to solve problems.
D2	Effectively communicate in academic and informative ambits ideas and concepts linked with the physical activity, health and sports studies.
D3	Be able to promote in academic and professional contexts activities to improve the technological advance, social and cultural, in physical activity, health and sports sciences field.
D4	Use basic tools of information and communication technologies (ICTs) needed for their profession exercise and for the lifelong learning.

Expected results from this subject	
Expected results from this subject	Training and Learning Results

New	B1 B2	C5 C7 C9 C10 C11 C13 C16	D4
New	B2	C6 C7 C9 C11 C16 C17 C20	
New	B4	C2 C4 C6 C13 C16 C20	D1 D2 D3

Contents	
Topic	
The scientific method in the investigation in physical education, physical activity and deposed.	Phases of the scientific method in educational investigation
Designs stop the investigation in physical education, physical activity and deposed.	1. Qualitative designs 2. Quantitative designs 3. Mixed designs
Implementation of one design of investigation in physical education, physical activity and deposed.	Models of designs
Collected and processing of corresponding data it a design of investigation in physical education, physical activity and deposed.	1. Instruments of collected of data 2. Strategies of analysis of data
Oral communication and writing of one design of investigation in physical education, physical activity and deposed.	1. Manufacture of one inform of investigation

Planning			
	Class hours	Hours outside the classroom	Total hours
Laboratory practical	130	260	390
Seminars	50	0	50
Problem solving	30	0	30
Essay	0	28	28
Problem and/or exercise solving	2	0	2
*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.			

Methodologies	
	Description
Laboratory practical	*Docencia Envelope the development of investigations within the scope of the physical education and his professional development. Reading of documents. Critical assessment of scientific works. Formulation and development of project of investigation
Seminars	Resolution of doubts and tracking of works
Problem solving	

Personalized assistance	
Methodologies	**Description**
Seminars	Resolution of doubts and tracking of works
Laboratory practical	development of the teaching in the office 101. In the event that it was necessary, it would be developed through the virtual campus (889)

Assessment					
	Description	Qualification	Training and Learning Results		
Laboratory practical	Assistance and development of a work of investigation inside the physical education and his professional development	40	B1 B2	C4 C5 C6 C9 C10 C11 C13 C16 C17 C20	D4
Seminars	Assistance to seminars of investigation in Sciences of the Physical Activity and of the Sport	30	B1 B4	C2 C7	D1 D2 D3
Problem solving	Resolution of practical tasks based in different moments of the process of investigation	30		C9 C11 C16 C17	

Other comments on the Evaluation

CONTINUOUS: Make the previous tasks

GLOBAL: In the second edition will take into account the development of a work of investigation inside the physical education and his professional development that will have will suppose 100% of the matter.

Sources of information

Basic Bibliography

Complementary Bibliography

Recommendations

IDENTIFYING DATA				
Analysis of Sports Performance				
Subject	Analysis of Sports Performance			
Code	P02M156V01204			
Study programme	Máster Universitario en Investigación en Actividad Física, Deporte y Salud			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	20	Optional	1st	2nd
Teaching language	Spanish Galician			
Department				
Coordinator	García García, Óscar			
Lecturers	García García, Óscar Rey Eiras, Ezequiel			
E-mail	oscargarcia@uvigo.es			
Web				
General description				

Training and Learning Results	
Code	
A2	The students known to apply the acquire knowledge and be able to solve problem in new environment or less known in wider contexts (or multidisciplinary) related with their study area.
A5	The students own the ability of learn to continuos studying, in wide range, on a self-directed and autonomous way.
B2	Be able to devise, design, put in to practice and adopt a research process rigorously academics in the physical activity, health and sports study ambit.
B4	Critically analyze, evaluate and synthesize new and complex ideas in the physical activity, health and sports study ambit.
C2	Develop scientific thoughts capacity to research in the physical activity, health and sports study ambit.
C4	Show link attitudes with excellence habits, ethical commitment and quality in the research exercise physical activity, health and sports study ambit
C5	Known and dominant the information search procedures and tools, both en primary and secondary sources in physical activity, health and sports.
C6	Be able to analyze organized, select, classify and compile information about physical activity, health and sports study ambit.
C7	Assess, manage and combine different techniques of physical activity, health and sports sciences research.
C9	Be able to design and implement a research work in the physical activity, health and sports study ambit.
C10	Manage software packages for the introduction and data analyze collected in the physical activity, health and sports study ambit.
C13	Execute the most used statistical analyzed technique of the physical activity, health and sports research.
C16	Be able to incorporated new technologies and integrate knowledge from other professional and scientific ambits.
C21	Develop on a efficient manner own task□s of the design, implementation, analyzed and publish work related wit the sports performance ambit.
D1	Critically assess the knowledge, the technology and the available information to solve problems.
D2	Effectively communicate in academic and informative ambits ideas and concepts linked with the physical activity, health and sports studies.
D3	Be able to promote in academic and professional contexts activities to improve the technological advance, social and cultural, in physical activity, health and sports sciences field.
D4	Use basic tools of information and communication technologies (ICTs) needed for their profession exercise and for the lifelong learning.

Expected results from this subject	
Expected results from this subject	Training and Learning Results

The student will be able to realise an analysis of the sportive performance in a determinate sport, using like variables of study those that have showed to be determinated factors of the performance in this sport	A2 A5	B2	C2 C4 C5 C6 C7 C9 C16 C21	D1 D3 D4
The student will be able to interpret the results, giving felt to the most notable findings of his research, work and analysis of the data		B2 B4	C2 C10 C13	D1 D2 D3 D4

Contents	
Topic	
The scientific method in the analysis in the sports	Identification of factors of the performance Hierarchy of the factors of the performance
Designs of investigation for the analysis of the sports	Designs of investigation for the analysis of the sports of situation Designs of investigation for the analysis of the sports bioenergetics
Implementation of a design for the analysis of one or several sports	Implement a design of investigation to analyse a concrete sport
Collected and processing of corresponding data to a design for the analysis of one or several sports	Collected and processing of corresponding data to a design for the analysis of the sport chosen
Oral communication and written of a design for the analysis of one or several sports	Oral communication and written of the design for the analysis of the sport chosen

Planning			
	Class hours	Hours outside the classroom	Total hours
Autonomous problem solving	0	100	100
Seminars	18	20	38
Laboratory practical	70	150	220
Flipped Learning	6	40	46
Lecturing	6	25	31
Problem and/or exercise solving	1	10	11
Essay	1	26	27
Essay	1	26	27
*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.			

Methodologies	
	Description
Autonomous problem solving	The student will resolve the tasks proposed by the educational
Seminars	Discussion in small groups on the contents of the matter
Laboratory practical	They will propose practices of laboratory
Flipped Learning	The student will receive through the platform of faitic documentation so that it can work on her and later can pose to the professor doubt or problems of learning related with these contents
Lecturing	Theoretical classes-practical given by the educational

Personalized assistance	
Methodologies	**Description**
Lecturing	The student will receive personalized attention at the time designated for it in each academic year. Agreed tutorials will also be established to monitor and control their activity of the theoretical contents within the subject. The tutorials or meetings will be held either in person or through virtual modality, either through the virtual offices of the teachers (1006, prof. Dr. Oscar García García), or by email or through the forums of the tele-teaching platform Moovi.
Laboratory practical	The student will receive personalized attention at the time designated for it in each academic year. Agreed tutorials will also be established to monitor and control their activity of the theoretical contents within the subject. The tutorials or meetings will be held either in person or through virtual modality, either through the virtual offices of the teachers (1006, prof. Dr. Oscar García García), or by email or through the forums of the tele-teaching platform Moovi.

Assessment

	Description	Qualification	Training and Learning Results			
Problem and/or exercise solving	The proof will consist in answering to a battery of ten questions of short answer	20	A5	B4	C2 C4 C6 C7	D1
Essay	The work will consist in identifying the factors that determine the performance in a determinate sportive discipline. Determine the solidest parameters to be evaluated and propose a design of a project of investigation related with these factors. The student will propose at least the aims, hypothesis, and method of a possible design of investigation. It will be necessary to approve it to surpass the matter	40	A2	B2 B4	C2 C4 C5 C6 C7 C9 C10 C13 C16 C21	D1 D2 D3 D4
Essay	The work will consist in making a statistical analysis of the sportive performance: The students will have to analyse real databases of professional sportsmen and issue a report of analysis of the performance applying technical statistics advanced.	40	A2	B2 B4	C2 C4 C5 C6 C7 C9 C10 C13 C16 C21	D1 D2 D3 D4

Other comments on the Evaluation

The student must pass all the CONTINUOUS assessment tests in order to pass the subject. In case of not having passed the subject in the first call, the skills not acquired will also be evaluated GLOBALLY in the July call. The evaluation in successive calls will be carried out in the same way as that initially proposed with the three tests. The official dates of the exams can be consulted on the website of the Faculty of Education and Sports Sciences http://fcced.uvigo.es/

Sources of information

Basic Bibliography

Hohmann, A., Lames, M., y Letzeier, M., **Introducción a la ciencia del entrenamiento.**, 1, Paidotribo, 2005

Tomas, J.R. y Nelson , J.K., **Métodos de investigación en actividad física.**, 1, Paidotribo, 2006

McGarry, T.; O´Donogue, P. y Sampaio, J., **Handbook of Sports performance analysis.**, 1, Routledge, 2013

Complementary Bibliography

Nacleiro, F., **Entrenamiento Deportivo: fundamentos y aplicaciones en diferentes deportes.**, 1, Medica panamericana, 2011

Neumaier, A. de Marees, H., Seiler, R., **Entrenamiento de la técnica. Contribuciones para un enfoque interdisciplinario.**, 1, Paidotribo, 2002

Magnusson, M.S., **Hidden real-time pattern in intra- and inter-individual behavior.**, Europan Journal of Psychological Assessment, 12(2, 1996

Beck, T. W., **The importance of a priori sample size estimation in strength and conditioning research**, Journal of Strength and Conditioning Research/Nati, 2013

Hopkins, W. G., Marshall, S. W., Batterham, A. M., & Hanin, J., **Progressive Statistics for Studies in Sports Medicine and Exercise Science**, Medicine & Science in Sports & Exercise, 4, 2009

Turner, A., Brazier, J., Bishop, C., Chavda, S., Cree, J., & Read, P., **Data Analysis for Strength and Conditioning Coaches: Using Excel to Analyze Reliability, Differences, and Relationships.**, Strength & Conditioning Journal, 37(1), 76□83., 2015

Recommendations

Subjects that it is recommended to have taken before

Exploratory Data Analysis and Inferential Analysis/P02M156V01108
Multivariate Analysis/P02M156V01109
Observation Designs Applied to Sports Research/P02M156V01105
Research Methods in Physical Activity and Sports Sciences/P02M156V01101
Scientific Communication and Documentation Sources in Physical Activity and Sports Sciences/P02M156V01102

Qualitative Methods in Physical Activity and Sports Sciences/P02M156V01106
Experimental and Quasi-experimental Methods in Physical Activity and Sports Sciences/P02M156V01103
Selective Correlational Methodology/P02M156V01104
Systematic Review and Meta-analysis/P02M156V01107

IDENTIFYING DATA				
Actividades Acuáticas e Socorrismo				
Subject	Actividades Acuáticas e Socorrismo			
Code	P02M156V01205			
Study programme	Máster Universitario en Investigación en Actividade Física, Deporte e Saúde			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	20	Optional	1	2c
Teaching language	Castelán Galego			
Department	Didácticas especiais			
Coordinator	Barcala Furelos, Roberto Jesús			
Lecturers	Barcala Furelos, Roberto Jesús			
E-mail	roberto.barcala@uvigo.es			
Web	http://remoss.webs.uvigo.es/			
General description	(*)Materia que forma en métodos de investigación en todo aquello relacionado con las actividades acuáticas, socorrismo, primeros auxilios y procedimientos clínicos orientados a la atención urgente.			

Resultados de Formación e Aprendizaxe
Code

Resultados previstos na materia	
Expected results from this subject	Training and Learning Results

Contidos	
Topic	
O método científico na análise das actividades acuáticas e do socorrismo.	Análise de investigación Actividades Acuáticas Análises de investigación en Socorrismo e primeiros auxilios
Deseños de investigación para a análise de de as actividades acuáticas e do socorrismo.	Deseños Observacionais Deseños experimentais e quasi-experimentais
Implementación dun deseño para a análise das actividades acuáticas e do socorrismo.	O obxecto de estudo As preguntas de investigación O deseño A interpretación
Recollida e procesamento de datos correspondentes a un deseño para a análise das actividades acuáticas e do socorrismo.	A recollida de datos en contornas acuáticas Rumbos e variables estrañas As análises estatísticas máis habituais en salvamento, socorrismo e primeiros auxilios.
Comunicación oral e escrita dun deseño para a análise das actividades acuáticas e do socorrismo.	Como escribir un traballo científico no ámbito de ciencias da saúde e ciencias do deporte Como presentar un traballo científico no ámbito das ciencias da saúde e as ciencias do deporte.

Planificación			
	Class hours	Hours outside the classroom	Total hours
Lección maxistral	2	0	2
Prácticas de laboratorio	40	0	40
Traballo tutelado	0	400	400
Seminario	11	0	11
Práctica de laboratorio	10	10	20
Estudo de casos	5	20	25
Presentación	2	0	2
*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.			

Metodoloxía docente	
	Description
Lección maxistral	Exposicións maxistrais sobre os contidos da materia.

Prácticas de laboratorio	Prácticas de investigación no laboratorio de control motor. Prácticas e colaboración coas investigacións nas contornas acuáticas (instalacións acuáticas e espazos acuáticos naturais)
Traballo tutelado	Traballo autónomo do alumno
Seminario	Reunións do grupo de investigación

Atención personalizada

Methodologies	Description
Prácticas de laboratorio	Prácticas dentro do grupo de investigación
Traballo tutelado	Traballos orientados ao coñecemento do método científico

Avaliación

	Description	Qualification	Training and Learning Results
Práctica de laboratorio	Prácticas de laboratorio (tanto dentro como fora do centro, en contextos reais ou simulados)	35	
Estudo de casos	Revisión da literatura para a análise de casos sobre algún tema propio da materia.	35	
Presentación	Exposicións orais en formato comunicación científica e debates sobre algún dos contidos da materia.	30	

Other comments on the Evaluation

AVALIACIÓN CONTINUA

Diversificado ao longo do semestre

AVALIACIÓN GLOBAL

Avaliación final cun exame composto de tres partes. 1 práctica de laboratorio, 1 estudio de caso e 1 presentación académica.

Bibliografía. Fontes de información

Basic Bibliography

Bierens, J., **Handbook on Drowning Prevention, Rescue, Treatment**, 1, Springer Nature, 2006

Complementary Bibliography

Pubmed,

Scopus,

Recomendacións

Other comments

Reunións periódicas do grupo de investigación na que se expoñen os avances das diferentes liñas de traballo e se discuten sobre as súas evidencias.
Titorías individuais nas que se expoñen os progresos dos traballos de investigación iniciados polo alumnado.

IDENTIFYING DATA				
Traballo de Fin de Máster				
Subject	Traballo de Fin de Máster			
Code	P02M156V01206			
Study programme	Máster Universitario en Investigación en Actividade Física, Deporte e Saúde			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	10	Mandatory	1	2c
Teaching language				
Department	Didácticas especiais			
Coordinator	Romo Pérez, Vicente			
Lecturers	Romo Pérez, Vicente			
E-mail	vicente@uvigo.es			
Web				
General description	O traballo consistirá no desenvolvemento, execución e redacción dun proxecto de investigación orixinal. Con ese obxectivo cada alumno realizará un traballo individual e autónomo academicamente dirixido por un profesor/a de o Máster			

Resultados de Formación e Aprendizaxe	
Code	
A1	Posuír e comprender coñecementos que acheguen unha base ou oportunidade de ser orixinais no desenvolvemento e/ou aplicación de ideas, adoito nun contexto de investigación.
A2	Que os estudantes saiban aplicar os coñecementos adquiridos e a súa capacidade de resolución de problemas en contornos novos ou pouco coñecidos dentro de contextos máis amplos (ou multidisciplinares) relacionados coa súa área de estudo.
A3	Que os estudantes sexan capaces de integrar coñecementos e se enfrontar á complexidade de formular xuízos a partir dunha información que, sendo incompleta ou limitada, inclúa reflexións sobre as responsabilidades sociais e éticas vinculadas á aplicación dos seus coñecementos e xuízos.
A4	Que os estudantes saiban comunicar as súas conclusións, e os coñecementos e razóns últimas que as sustentan, a públicos especializados e non especializados dun xeito claro e sen ambigüidades.
A5	Que os estudantes posúan as habilidades de aprendizaxe que lles permitan continuar estudando dun xeito que terá que ser, en grande medida, autodirixido e autónomo.
B1	Coñecer e comprender o campo de estudo da actividade física, saúde e deporte, adquirindo un suficiente de habilidades e métodos de investigación en devandita área.
B2	Ser capaz de idear, deseñar, poñer en práctica e adoptar un proceso de investigación con rigor académica no ámbito de estudo da actividade física, saúde e deporte.
B3	Ser capaz de desenvolver unha investigación orixinal no ámbito de estudo da actividade física, a saúde e o deporte, cunha claridade suficiente para ser susceptible de publicación a nivel nacional e internacional.
B4	Analizar de forma crítica, evaluar e sintetizar ideas novas e complexas no ámbito de estudo da actividade física, saúde e deporte.
C14	Planificar, redactar e expoñer verbalmente un traballo de investigación no área Ciencias da Actividade Física e o Deporte
C15	Redactar de forma precisa e cun uso apropiado da linguaxe científica unha memorias de investigación nas Ciencias da Actividade Física e o Deporte.
D1	Valorar críticamente o coñecemento, a tecnoloxía e a información dispoñible para a resolución de problemas.
D2	Comunicar eficazmente en ámbitos académicos e divulgativos ideas e conceptos vinculados co estudos da actividade física, a saúde e o deporte.
D3	Ser capaz de promover en contextos académicos e profesionais accións destinadas ao avance tecnolóxico, social ou cultural, no ámbito das ciencias da actividade física, saúde e deporte.
D4	Utilizar as ferramentas básicas das tecnoloxías da información e as comunicacións (TIC) necesarias para o exercicio da súa profesión e para a aprendizaxe ao longo da súa vida.

Resultados previstos na materia				
Expected results from this subject	Training and Learning Results			
En función do Traballo Fin de Máster realizado polo alumno/a.	A1 A2 A3 A4 A5	B1 B2 B3 B4	C14 C15	D1 D2 D3 D4

Contidos	
Topic	
Traballo Fin de Máster	Traballo Fin de Máster

Planificación	Class hours	Hours outside the classroom	Total hours
Actividades introdutorias	2	0	2
Presentación	5	0	5
Seminario	0	43	43
Traballo tutelado	0	200	200

*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

Metodoloxía docente	Description
Actividades introdutorias	O profesor explica ao alumnado as características do Traballo Fin de Máster
Presentación	Presentación do alumno do traballo realizado e artigos que analizou
Seminario	El profesor resolvera dudas y orientará al alumnado en el Trabajo Fin de Máster
Traballo tutelado	O alumnado realizará a investigación redactará o Traballo Fin de Grao coa tutela do profesor/a

Atención personalizada	
Methodologies	**Description**
Actividades introdutorias	O profesor explica ao alumnado as características do Traballo Fin de Máster
Presentación	Presentación do alumno do traballo realizado e artigos que analizou

Avaliación	Description	Qualification	Training and Learning Results			
Traballo tutelado	Avaliarase a memoria final polo seu contido, redacción e presentación. Avaliarase a exposición oral e a utilización de medios gráficos, así como a asistencia á todas as presentacións dos alumnos do Máster	100	A1 A2 A3 A4 A5	B1 B2 B3 B4	C14 C15	D1 D2 D3 D4

Other comments on the Evaluation

Bibliografía. Fontes de información

Basic Bibliography

Complementary Bibliography

Rodríguez, ML y Llanes, J, **El trabajo fin de máster**,

Recomendacións