



MASTERS

2018-20

ACTUARIAL  
SCIENCE



LISBON  
SCHOOL OF  
ECONOMICS &  
MANAGEMENT

UNIVERSIDADE DE LISBOA



# ACTUARIAL SCIENCE

## Scientific and Pedagogical Committee

**Maria de Lourdes Centeno (Coordinator)**, Full Professor  
**João Andrade e Silva**, Senior Associate Professor  
**Onofre Simões**, Assistant Professor

## WELCOME



**Maria de Lourdes Centeno**

It is with great honour and satisfaction that I address you as the director of the Masters in Actuarial Science at ISEG – Lisbon School of Economics and Management from Universidade de Lisboa.

ISEG has a long tradition in teaching Actuarial Science and has been offering a Masters degree in this subject since 1993/94. In 2010/11 we went one step further

and are now offering a Masters fully taught in English, which is accredited by the Institute and Faculty of Actuaries (IFoA) in the UK and has been giving exemptions for most of their Core Technical subjects.

Our programmes for 2018/19 accompany IFoA syllabus changes.

At ISEG, we teach students to think and to make decisions based on true individual choice rather than on any kind of pre-defined model. We are proud of the team of lecturers who teach this Masters, and their achievements in international research are on a par with the best international schools of Actuarial Science. We are also proud of our contacts within the Portuguese actuarial community, which is made up of a high percentage of our Masters' alumni. This relationship enables us to find internships for a good number of our students.

Bearing in mind this continuing responsibility and having the certainty that ISEG will continue to be a reference in Actuarial Science in terms of teaching and research, we invite you to learn more about us through this brochure.

Enjoy your experience at ISEG!

## ABOUT THE PROGRAMME

The main objective of the Masters in Actuarial Science is to train students for the actuarial profession, in its multiple components: life, non-life, financial and pension funds. The programme offers a solid academic foundation in Actuarial Science, Statistics and Finance.

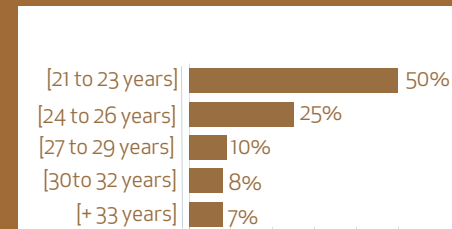
The Masters was designed in accordance with international requirements for the actuarial profession. It aims to cover most of the course subjects that are indispensable for the accreditation of an actuary in the European Union, as designated by The Actuarial Association of Europe, as well as the majority of the subjects of the professional exams for admission as an Associate of the Institute and Faculty of Actuaries in the UK, or of the Society of Actuaries in North America.

The Masters in Actuarial Science at ISEG was evaluated by The Institute and Faculty of Actuaries (IFoA), in the UK. From 2011 to 2016 an Exemption Recognition Agreement has been in force, according to which students who achieve good results in their degree, as determined by an independent examiner appointed by the IFoA, are exempted from a significant number of the UK professional actuarial examinations. Starting in 2017 the Masters Programme has been accredited as a whole, which can lead to exemptions based on the students overall performance during the masters.

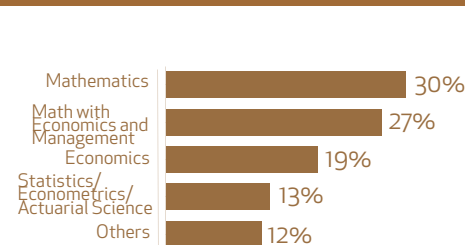
The present study programme was also accredited by the Portuguese Agency for the Assessment and Accreditation of Higher Education - A3ES.

# STUDENT PROFILE\*

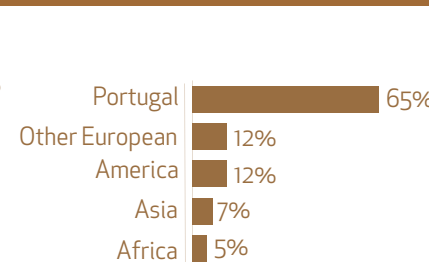
## AGE



## BACKGROUND



## NACIONALITIES



\*Based on seven Masters editions (from 2011-12 to 2016-17)



**Bram Kierkels**

Masters' student in 2011-2013  
 Risk Consultant at Triple A - Risk Finance

"During my bachelor degree in Mathematics, I was especially interested in probability and statistics. I decided to do a Masters degree in Actuarial Science. It was a good choice to study for the Masters at ISEG. The relatively small size of the group, together with the enthusiasm of the professors and their interest and genuine concern about the student all combine to create a pleasant atmosphere in the class room to work in. In the last semester of the curriculum you have the opportunity to do an internship. I went to Melbourne, Australia, for half a year, to work as an intern at Taylor Fry Consulting Actuaries. As a student from the Netherlands, it was a great experience to study in another culture and to do an internship on the other side of the globe. I ended up with friends from almost every continent of the world. Apart from that, completing the Masters resulted in several job offers from banks and insurance companies. I decided to start my career at the Central Bank of the Netherlands, where I worked for the Actuarial Services and Risk Management department."



**Rodrigue Kazzi**

Masters' student in 2016-2018  
 PhD student at Vrije Universiteit Brussel

"After finishing my bachelor studies, I wanted to pursue a Master program in Actuarial Science that could expand my knowledge and broaden my horizons as much as possible. Finding this Masters, which is simultaneously accredited by the Institute and Faculty of Actuaries (IFoA) in the UK and highly regarded by the Society of Actuaries (SOA) in North America, fulfilled my demand!

During my two years at ISEG, I was more than satisfied with the professors who are at the same time experts in their fields, modest, and caring! Additionally, living in Lisbon was a very joyful experience! I can confidently say that the master gave me a solid background in both the theoretical and practical aspects of Actuarial Science. I could see this during my last two internships and my Ph.D. studies so far. Actually, this program is highly regarded by the academic and industrial sectors as I have received several job offers and have been admitted to a Ph.D. program in Actuarial Science without any additional requirement.

Today, I can proudly say I made an optimal investment of these two years of my life!"



**Joana Gregório Raposo**

Masters' student in 2013-2015 Actuary  
 at AON Global Risk Consulting, Luxembourg

"The quality and accuracy of education, the secular prestige and recognition render ISEG a singular and international Institution. My passion for Mathematics combined with Society's demands could only have brought me to ISEG. After concluding the undergraduate degree in Mathematics Applied to Economics and Management and due to the high technical standards in my profession there was no margin for doubts in proceeding to the Master degree in Actuarial Science, as more than an academic deepening, a technical one. The excellence of education at ISEG allied with the fact that the Master is lectured in English and there is an exemption agreement with IFoA, made this a natural choice.

I highly recommend the Master in Actuarial Science to all those who aspire to initiate a career in the actuarial world, as well as to those working in Insurance, Pensions or Investments who long to obtain both competences' specialization as certification.

Today, in my daily professional role, I recognise and put into practice the teachings and values transmitted by the Faculty and acquired while studying at ISEG. To be an isegian is having your Family extended!"



Top 50 Best Masters in Insurance Global  
 Ranking - Ranked nº18 in the world.  
 (www.best-masters.com)

# STUDY PROGRAMME

## 1<sup>st</sup> YEAR

CREDITS	IFoA*	1 <sup>st</sup> SEMESTER	TYPE
4	CS1 - 10%	COMPUTATION TOOLS FOR ACTUARIES José Pedro Gaivão	Obligatory
6	CM2 - 40%	FINANCIAL MARKETS AND INVESTEMENTS Raquel Gaspar	Obligatory
6	CM1 - 45%	FINANCIAL MATHEMATICS Onofre Simões	Obligatory
8	CS1 - 15% CS2 - 30%	PROBABILITY AND STOCHASTIC PROCESSES Alexandra Moura	Obligatory
6	CS1 - 35%	RISK MODELS João Andrade e Silva	Obligatory

CREDITS	IFoA*	2 <sup>ND</sup> SEMESTER	TYPE
4	CS1 - 30% CS2 - 10%	GENERALISED LINEAR MODELS To define	Obligatory
4	CM2 - 10%	LOSS RESERVING Walther Neuhaus	Obligatory
8	CS2 - 15% CM2 - 10%	RISK THEORY Maria de Lourdes Centeno	Obligatory
8	CM1 - 55%	SURVIVAL MODELS AND LIFE CONTINGENCES Onofre Simões	Obligatory
6	CS2 - 20%	TIME SERIES Nuno Sobreira	Obligatory

\*Weights for exemptions based on the subject by subject basis.

# STUDY PROGRAMME

## 2<sup>nd</sup> YEAR

CREDITS	IFoA*	1 <sup>st</sup> SEMESTER	TYPE
6	CS2 - 25%	ACTUARIAL TOPICS Agnieszka Bergel	Elective (1)
4		ASSET-LIABILITY MANAGEMENT Walther Neuhaus	Elective (2)
6	CB1 - 100%	FINANCE AND FINANCIAL REPORTING Pedro Rino Vieira	Elective (2)
8	CM2 - 40%	MODELS IN FINANCE João Guerra	Obligatory
4		PENSION FUNDS Fátima Pires de Lima	Elective (1)
4	CS1 - 10%	RATEMAKING AND EXPERIENCE RATING Alfredo Egídio dos Reis	Elective (1)
4		SOLVENCY MODELS Hugo Borginho	Obligatory

The students must pass a total of 18 ECTS in optional units, with a minimum of 8 ECTS in optional (1) and 4 ECTS in optional (2)

CREDITS	2 <sup>ND</sup> SEMESTER	TYPE
30	MFW (THESIS/INTERNSHIP/PROJECT)	Obligatory

## MASTERS PROGRAMME

Each year is split into two semesters. In each of the first three semesters you will study several curricular units which correspond to 30 ECTS (credits). You may be able to spend the third semester at a partner university, through the ERASMUS programme. During the fourth semester you can either undertake an internship at an insurance company, or write a dissertation or a project.

18<sup>TH</sup> EDITION

SCHEDULE: DAYTIME

START DATE: 17<sup>TH</sup> SEPTEMBER 2018

COURSE DURATION: 2 YEARS



# TEN REASONS TO CHOOSE ACTUARIAL SCIENCE AT ISEG

**1** ISEG, Lisbon School of Economics and Management is the only School in Portugal that offers a University degree in Actuarial Science.

**2** Since 2013 ISEG is part of the Universidade de Lisboa (ULisboa), which is now the largest University in Portugal. The University of Lisbon is the result of the merger of two public Universities in Lisbon, the former University of Lisbon (1911-2013) and the Technical University of Lisbon (1930-2013). The history of the University of Lisbon dates back to the 13th century. ISEG history dates back to 1789 and it was one of the original founders of the Technical University of Lisbon in 1930. The University of Lisbon is the Portuguese leader in most rankings.

**3** ISEG is one of the few non-British programmes fully accredited by the Institute and Faculty of Actuaries in the UK. It is also part of the UCAP list of the Society of Actuaries in USA.

**4** Our program provides in depth coverage of the most up-to-date actuarial knowledge and required competences and offers a short

route to becoming an actuary after completing a BSc. It is one of the 50 best Masters in Insurance according to the Eduniversal Best Masters ranking.

**5** ISEG has a group of lecturers whose achievements in international research are on a par with the best international schools of Actuarial Science and some of them are practitioner actuaries. Our academic staff is dedicated and always willing to support and advise students.

**6** ISEG has excellent modern facilities, including a extensive library, which is particularly complete in the field of Actuarial Science. Students have access to study rooms, accessible during extended hours.

**7** As success in the professional world is not just about passing exams and gaining exemptions, ISEG helps you to gain other skills. Research seminars, seminars with speakers from industry, organised by the ISEG Actuarial Science Club, a career development programme and a career development team, which provides counselling service, are also at your disposal.



The ACE Team of the Masters in Actuarial Science at ISEG on the TOP3 of the Case Study Challenge promoted by the Society of Actuaries in 2018.

**8** Our programme offers many internship opportunities, which give you an advantage when applying for jobs.

**9** ISEG is located in the centre of Lisbon, one of the most beautiful and historical capitals of Europe, and still one of the less expensive.

**10** Our fees are very competitive, when compared to other similar programmes, especially for students outside the EU.



# USEFUL INFORMATION

## ADMISSION

Applications for all Masters at ISEG are made online. The deadline for the 2017-18 intake is the 31st of May, but you are advised to apply before the 28th of February, especially if you need a STUDENT VISA.

We require a solid academic background in Mathematical Analysis and Statistics. This normally implies holding a bachelor's degree in Mathematics, Mathematics with Economics or Statistics, and some of the bachelor's degrees in Economics, Finance or Management. Applicants from other academic disciplines will be considered on a case-by-case basis. Accepted applicants have normally achieved a minimum of 14 out of 20 points in the Portuguese system or a 2:1 honours in the British system, or equivalent (e.g. G.P.A. 3.0). Candidates are selected according to their BSc grade, their CV details and possibly an interview. If you are in the last year of studies for your BSc, you may apply on the basis of your predicted grade and your application will be considered for a conditional offer.

## APPLICATION

### 1<sup>ST</sup> STEP

Fill out our application form. You will need to attach some digitalised documents: photo, ID document (passport if you require a Student Visa), bachelor's degree certificate, academic transcript of records and CV, and you must

also pay the application fee. You may submit these documents later on, and/or pay the application fee by logging on to our site, using the username and password that were previously supplied by us via E-mail. Your application will be considered valid only after all the documents have been submitted and the application fee has been paid. Payment can be made in three ways: by ATM — only if you hold a Portuguese Bank Account, by Bank Transfer or by Paypal — if you live outside Portugal. Please note that you don't need to have a Paypal account, but you just need to have a credit card that is accepted by Paypal. If payment is made by Bank Transfer, then you need to send proof of the payment to [smd@iseg.ulisboa.pt](mailto:smd@iseg.ulisboa.pt)

### 2<sup>ND</sup> STEP

After your application has been validated, it will then be analysed by ISEG (you may well be contacted at this stage by the Scientific and Pedagogical Masters Committee). Next you will be contacted after a decision has been made.

### 3<sup>RD</sup> STEP

If you are accepted and to secure a place for the Masters you are given a deadline for acceptance (this is made online) and for the payment of a non-refundable registration fee. This can be done in the same way as the application fee.

## STUDENT VISA

If you are not a EU, EAA or Swiss citizen, then you need a Student VISA.

After you have definitely accepted our offer and have paid the registration fee to secure your place, you will be able to download the acceptance letter on Aquila Portal, which you need to apply for a Study Visa. At this stage, you should contact the nearest Portuguese Consulate or Embassy, in your country, to find out which other documents are necessary. If there is no Portuguese Consulate or Embassy in your country, ISEG will let you know where to apply. We advise all students entering in Portugal with a visa to book an appointment with Helena Cardoso, from the ISEG Masters & Phd Office, on the first working day after their arrival in Portugal. Helena will help you with the first contact with SEF – the Immigration Authority. This is particularly urgent if your passport was not stamped upon arrival in Portugal.

## FEES

**Students from the European Union:**  
APPLICATION FEE: €50  
FEE FOR THE FIRST YEAR: €3500  
FEE FOR THE SECOND YEAR: €2000

**International Students:**  
APPLICATION FEE: €50  
FEE FOR THE FIRST YEAR: €4000  
FEE FOR THE SECOND YEAR: €2000



Lisbon



# ISEG PROGRAMMES

## UNDERGRADUATE

- > Economics<sup>(1)</sup>
- > Management <sup>(1)</sup>
- > Economia
- > Gestão
- > Finanças
- > Matemática Aplicada à Economia e à Gestão
- > Gestão do Desporto (lectured in conjunction with FMH)

## PhD PROGRAMMES

- > Economia<sup>(1)</sup>
- > Gestão
- > Matemática Aplicada à Economia e à Gestão
- > História Económica e Social
- > Sociologia Económica e das Organizações
- > Development Studies<sup>(1)</sup>
- > Sistemas Sustentáveis de Energia
- > Sociologia
- > Sustainability Science

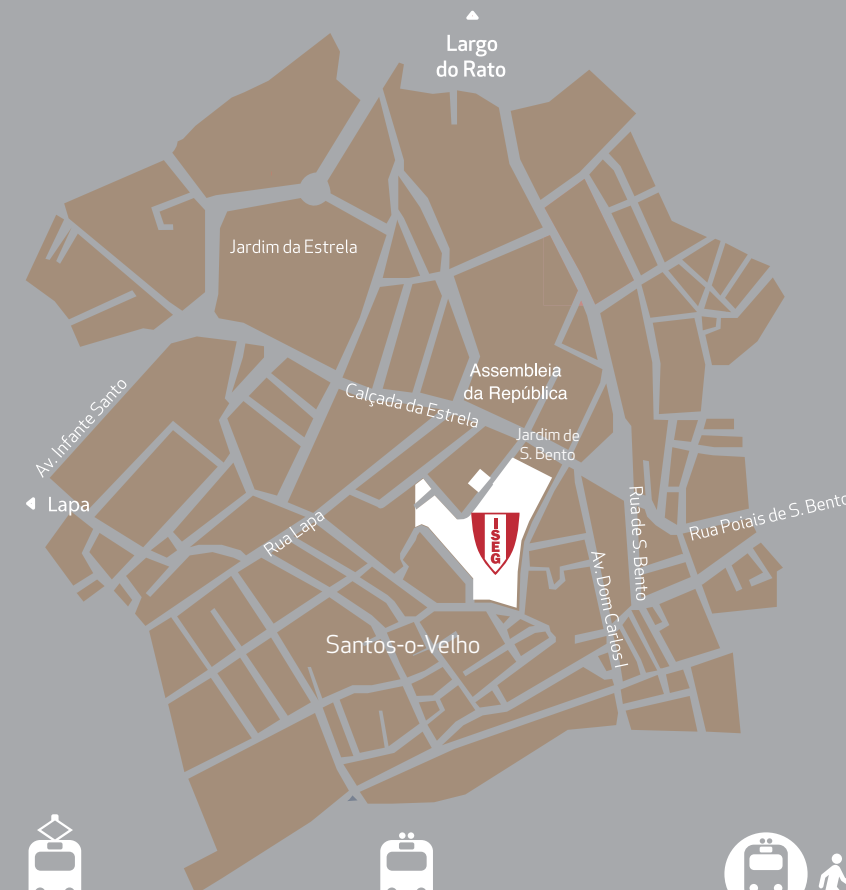
## MASTERS

- > Actuarial Science<sup>(1)</sup>
- > Economics <sup>(1)</sup>
- > Finance<sup>(1)</sup>
- > Mathematical Finance <sup>(1)</sup>
- > Monetary and Financial Economics<sup>(1)</sup>
- > Ciências Empresariais
- > Contabilidade, Fiscalidade e Finanças Empresariais
- > Métodos Quantitativos para a Decisão Económica e Empresarial
- > Desenvolvimento e Cooperação Internacional
- > Econometria Aplicada e Previsão
- > Economia e Gestão de Ciência, Tecnologia e Inovação
- > Economia e Políticas Públicas
- > Economia Internacional e Estudos Europeus
- > Gestão de Projetos
- > Gestão de Recursos Humanos
- > Gestão de Sistemas de Informação
- > Gestão e Estratégia Industrial
- > Marketing

<sup>(1)</sup> Lectured in English

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# HOW TO GET TO ISEG



BUS

**706-727**  
Av. D. Carlos I  
1 minute on foot

**713-773**  
Rua Borges Carneiro  
5 minutes on foot

**714-760-774**  
Largo Conde Barão  
5 minutes on foot

**728**  
Av. 24 de Julho  
7 minutes on foot



TRAM  
**28-25**  
Calçada da Estrela  
2 minutes on foot

**15-18**  
Av. 24 de Julho  
5 minutes on foot



TRAIN  
The Cascais line,  
leaving from  
Estação de Santos  
7 minutes on foot



METRO  
The Yellow Line,  
with exit at  
Estação do Rato  
10 minutes on foot

The Green Line,  
with exit at  
Cais do Sodré  
15 minutes on foot



BOAT  
With links to the city  
by bus, tram or on foot,  
with a ferry terminal at  
Terreiro do Paço  
20 minutes on foot

or at  
Cais do Sodré  
15 minutes on foot

# CONTACTS

Masters & PhD Office  
smd@iseg.ulisboa.pt  
+351 213 925 800

Opening hours:  
From 9:30am to 7:30 pm

Masters webpage:  
[www.iseg.ulisboa.pt/aquila/cursos/ca?locale=en](http://www.iseg.ulisboa.pt/aquila/cursos/ca?locale=en)



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[www.iseg.ulisboa.pt](http://www.iseg.ulisboa.pt)



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ACCREDITATION



Institute  
and Faculty  
of Actuaries



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