

DIVISION OF COMPUTING, ENGINEERING AND MATHEMATICAL SCIENCES

School of Mathematics, Statistics and Actuarial Science

School Website: www.kent.ac.uk/smsas

Please refer to the online Module Catalogue for full details of all modules:
www.kent.ac.uk/courses/modules

Note: It is ultimately your responsibility to ensure that you are registered for the correct modules for your course.

Please select a link below to view the requirements for your course:

- [Actuarial Science](#)
- [Actuarial Science with an Industrial Placement](#)
- [Applied Actuarial Science \(MSc\)](#)
- [Applied Actuarial Science with an Industrial Placement](#)
- [Applied Actuarial Science \(International Masters\) – 360 Credit Version](#)
- [Applied Actuarial Science with an Industrial Placement \(International Masters\) – 510 Credit Version](#)
- [Statistical Data Science \(Formerly Statistics\)](#)
- [Statistical Data Science with an Industrial Placement \(Formerly Statistics with an Industrial Placement\)](#)

The information contained herein is correct at the time of publication. Please note, however, that if a module recruits fewer than 8 students it is possible that it will not run. In this event, you will be contacted and asked to select an alternative module.

ACTUARIAL SCIENCE**PASC0001X2MS-F****ACTUARIAL SCIENCE WITH AN INDUSTRIAL PLACEMENT****PASC0001P1MS-F****STAGE 1 – 180 – 210 credits – credit imbalance permitted****You must take at least 180 credits and no more than 210 credits from the following optional modules:**

| Optional modules: | MODULE TITLE | CREDIT AMOUNT | TERM TAUGHT | CREDIT LEVEL |
|--------------------------|---|----------------------|--------------------|---------------------|
| MACT7009 | Financial Mathematics | 15 | Autumn | 7 |
| MACT7290 | Probability and Statistics for Actuarial Science | 30 | Autumn | 7 |
| MACT7350 | Actuarial Mathematics | 30 | Year-long | 7 |
| MACT8190 | Business Economics | 15 | Spring | 7 |
| MACT8250 | Survival Analysis | 15 | Autumn | 7 |
| MACT8260 | Finance & Financial Reporting | 15 | Autumn & Spring | 7 |
| MACT8350 | Financial Economics and Asset and Liability Modelling | 15 | Autumn & Spring | 7 |
| MACT8370 | Mathematics of Financial Derivatives | 15 | Year-long | 7 |
| MACT8400 | Financial Modelling | 15 | Autumn & Spring | 7 |
| MAST5010 | Statistics for Insurance | 15 | Spring | 5 |
| MAST6390 | Time Series Modelling and Simulation | 15 | Spring | 6 |
| MAST8360 | Stochastic Processes | 15 | Autumn | 7 |

PLUS you must take the following non-contributory compulsory module:

| Compulsory module: | MODULE TITLE | CREDIT AMOUNT | TERM TAUGHT | CREDIT LEVEL |
|---------------------------|-----------------------|----------------------|--------------------|---------------------|
| WMATH016 | Introduction to Excel | 0 | Autumn | W |

All students can also take the following non-contributory optional module:

| Optional module: | MODULE TITLE | CREDIT AMOUNT | TERM TAUGHT | CREDIT LEVEL |
|-------------------------|-----------------------------------|----------------------|--------------------|---------------------|
| WMATH015 | SMSAS Industrial Practice Masters | 0 | Autumn & Spring | W |

ACTUARIAL SCIENCE WITH AN INDUSTRIAL PLACEMENT**PASC0001P1MS-F****150 credits (12 months) – PLACEMENT MODULES (Year 2)****You must take the following compulsory modules (150 credits):**

| Compulsory modules: | MODULE TITLE | CREDIT AMOUNT | TERM TAUGHT | CREDIT LEVEL |
|----------------------------|--|----------------------|--------------------|---------------------|
| MAST7801 | Industrial Placement Report and Presentation | 30 | Year-long | 7 |
| MAST7805 * | Industrial Placement Experience | 120 | Year-long | 7 |

*Module cannot be compensated or condoned

STAGE 1 – 180 credits – credit imbalance permitted

You must take the following compulsory modules (75 credits):

| Compulsory modules: | MODULE TITLE | CREDIT AMOUNT | TERM TAUGHT | CREDIT LEVEL |
|----------------------------|-----------------------------|----------------------|--------------------|---------------------|
| MACT9210 | Actuarial Risk Management 1 | 30 | Autumn | 7 |
| MACT9220 | Actuarial Risk Management 2 | 30 | Autumn & Spring | 7 |
| MACT9530 | Communications | 15 | Autumn & Spring | 7 |

You must take 105 credits from the following optional modules:

| Optional modules: | MODULE TITLE | CREDIT AMOUNT | TERM TAUGHT | CREDIT LEVEL |
|--------------------------|---|----------------------|--------------------|---------------------|
| MACT9090 | Enterprise Risk Management | 30 | Autumn & Spring | 7 |
| MACT9120 | Life Insurance | 30 | Autumn & Spring | 7 |
| MACT9150 | Finance and Investment | 30 | Autumn & Spring | 7 |
| MACT9170 | General Insurance Reserving and Capital Modelling | 30 | Autumn & Spring | 7 |
| MACT9180 | General Insurance Pricing | 30 | Autumn & Spring | 7 |
| MACT9500 | Prophet | 15 | Spring | 7 |
| MACT9520 | Financial Modelling | 15 | Year-long | 7 |
| MAST9420 | Data Science with R | 15 | Autumn | 7 |

All students can also take the following non-contributory optional module:

| Optional module: | MODULE TITLE | CREDIT AMOUNT | TERM TAUGHT | CREDIT LEVEL |
|--------------------------|-----------------------------------|----------------------|--------------------|---------------------|
| WMATH015 | SMSAS Industrial Practice Masters | 0 | Autumn & Spring | W |

STAGE 1 – 180 credits – credit imbalance permitted

You must take the following compulsory modules (75 credits):

| Compulsory modules: | MODULE TITLE | CREDIT AMOUNT | TERM TAUGHT | CREDIT LEVEL |
|----------------------------|-----------------------------|----------------------|--------------------|---------------------|
| MACT9210 | Actuarial Risk Management 1 | 30 | Autumn | 7 |
| MACT9220 | Actuarial Risk Management 2 | 30 | Autumn & Spring | 7 |
| MACT9530 | Communications | 15 | Autumn & Spring | 7 |

You must take 105 credits from the following optional modules:

| Optional modules: | MODULE TITLE | CREDIT AMOUNT | TERM TAUGHT | CREDIT LEVEL |
|--------------------------|---|----------------------|--------------------|---------------------|
| MACT9090 | Enterprise Risk Management | 30 | Autumn & Spring | 7 |
| MACT9120 | Life Insurance | 30 | Autumn & Spring | 7 |
| MACT9150 | Finance and Investment | 30 | Autumn & Spring | 7 |
| MACT9170 | General Insurance Reserving and Capital Modelling | 30 | Autumn & Spring | 7 |
| MACT9180 | General Insurance Pricing | 30 | Autumn & Spring | 7 |
| MACT9500 | Prophet | 15 | Spring | 7 |
| MACT9520 | Financial Modelling | 15 | Year-long | 7 |
| MAST9420 | Data Science with R | 15 | Autumn | 7 |

All students can also take the following non-contributory optional module:

| Optional module: | MODULE TITLE | CREDIT AMOUNT | TERM TAUGHT | CREDIT LEVEL |
|-------------------------|-----------------------------------|----------------------|--------------------|---------------------|
| WMATH015 | SMSAS Industrial Practice Masters | 0 | Autumn & Spring | W |

150 credits (12 months) – PLACEMENT MODULES (Year 2)

You must take the following compulsory modules (150 credits):

| Compulsory modules: | MODULE TITLE | CREDIT AMOUNT | TERM TAUGHT | CREDIT LEVEL |
|----------------------------|--|----------------------|--------------------|---------------------|
| MAST7801 | Industrial Placement Report and Presentation | 30 | Year-long | 7 |
| MAST7805 * | Industrial Placement Experience | 120 | Year-long | 7 |

*Module cannot be compensated or condoned

STAGE 1 – 180 – 210 credits – credit imbalance permitted

You must take at least 180 credits and no more than 210 credits from the following optional modules (at least 150 credits must be taken at Level 7):

| Optional modules: | MODULE TITLE | CREDIT AMOUNT | TERM TAUGHT | CREDIT LEVEL |
|-------------------|---|---------------|-----------------|--------------|
| MACT7009 | Financial Mathematics | 15 | Autumn | 7 |
| MACT7290 | Probability and Statistics for Actuarial Science | 30 | Autumn | 7 |
| MACT7350 | Actuarial Mathematics | 30 | Year-long | 7 |
| MACT8190 | Business Economics | 15 | Spring | 7 |
| MACT8250 | Survival Analysis | 15 | Autumn | 7 |
| MACT8260 | Finance & Financial Reporting | 15 | Autumn & Spring | 7 |
| MACT8350 | Financial Economics and Asset and Liability Modelling | 15 | Autumn & Spring | 7 |
| MACT8370 | Mathematics of Financial Derivatives | 15 | Year-long | 7 |
| MACT8400 | Financial Modelling | 15 | Autumn & Spring | 7 |
| MAST5010 | Statistics for Insurance | 15 | Spring | 5 |
| MAST6390 | Time Series Modelling and Simulation | 15 | Spring | 6 |
| MAST8360 | Stochastic Processes | 15 | Autumn | 7 |

PLUS you must take the following non-contributory compulsory module:

| Compulsory module: | MODULE TITLE | CREDIT AMOUNT | TERM TAUGHT | CREDIT LEVEL |
|--------------------|-----------------------|---------------|-------------|--------------|
| WMATH016 | Introduction to Excel | 0 | Autumn | W |

All students can also take the following non-contributory optional module:

| Optional module: | MODULE TITLE | CREDIT AMOUNT | TERM TAUGHT | CREDIT LEVEL |
|------------------|-----------------------------------|---------------|-----------------|--------------|
| WMATH015 | SMSAS Industrial Practice Masters | 0 | Autumn & Spring | W |

STAGE 2 – 180 credits – credit imbalance permitted

You must take the following compulsory modules (75 credits):

| Compulsory modules: | MODULE TITLE | CREDIT AMOUNT | TERM TAUGHT | CREDIT LEVEL |
|---------------------|-----------------------------|---------------|-----------------|--------------|
| MACT9210 | Actuarial Risk Management 1 | 30 | Autumn | 7 |
| MACT9220 | Actuarial Risk Management 2 | 30 | Autumn & Spring | 7 |
| MACT9530 | Communications | 15 | Autumn & Spring | 7 |

You must take 105 credits from the following optional modules:

| Optional modules: | MODULE TITLE | CREDIT AMOUNT | TERM TAUGHT | CREDIT LEVEL |
|-------------------|----------------------------|---------------|-----------------|--------------|
| MACT9090 | Enterprise Risk Management | 30 | Autumn & Spring | 7 |

| | | | | |
|--------------------------|---|----|-----------------|---|
| MACT9120 | Life Insurance | 30 | Autumn & Spring | 7 |
| MACT9150 | Finance and Investment | 30 | Autumn & Spring | 7 |
| MACT9170 | General Insurance Reserving and Capital Modelling | 30 | Autumn & Spring | 7 |
| MACT9180 | General Insurance Pricing | 30 | Autumn & Spring | 7 |
| MACT9500 | Prophet | 15 | Spring | 7 |
| MACT9520 | Financial Modelling | 15 | Year-long | 7 |
| MAST9420 | Data Science with R | 15 | Autumn | 7 |

**APPLIED ACTUARIAL SCIENCE WITH AN INDUSTRIAL
PLACEMENT (INTERNATIONAL MASTERS) – 510 CREDIT VERSION**

PAAS0001P3MS-F

STAGE 1 – 180 – 210 credits – credit imbalance permitted

You must take at least 180 credits and no more than 210 credits from the following optional modules:

| Optional modules: | MODULE TITLE | CREDIT AMOUNT | TERM TAUGHT | CREDIT LEVEL |
|--------------------------|---|----------------------|--------------------|---------------------|
| MACT7009 | Financial Mathematics | 15 | Autumn | 7 |
| MACT7290 | Probability and Statistics for Actuarial Science | 30 | Autumn | 7 |
| MACT7350 | Actuarial Mathematics | 30 | Year-long | 7 |
| MACT8190 | Business Economics | 15 | Spring | 7 |
| MACT8250 | Survival Analysis | 15 | Autumn | 7 |
| MACT8260 | Finance & Financial Reporting | 15 | Autumn & Spring | 7 |
| MACT8350 | Financial Economics and Asset and Liability Modelling | 15 | Autumn & Spring | 7 |
| MACT8370 | Mathematics of Financial Derivatives | 15 | Year-long | 7 |
| MACT8400 | Financial Modelling | 15 | Autumn & Spring | 7 |
| MAST5010 | Statistics for Insurance | 15 | Spring | 5 |
| MAST6390 | Time Series Modelling and Simulation | 15 | Spring | 6 |
| MAST8360 | Stochastic Processes | 15 | Autumn | 7 |

All students can also take the following non-contributory optional module:

| Optional module: | MODULE TITLE | CREDIT AMOUNT | TERM TAUGHT | CREDIT LEVEL |
|--------------------------|-----------------------------------|----------------------|--------------------|---------------------|
| WMATH015 | SMSAS Industrial Practice Masters | 0 | Autumn & Spring | W |

STAGE 2 – 180 credits – credit imbalance permitted

You must take the following compulsory modules (75 credits):

| Compulsory modules: | MODULE TITLE | CREDIT AMOUNT | TERM TAUGHT | CREDIT LEVEL |
|----------------------------|-----------------------------|----------------------|--------------------|---------------------|
| MACT9210 | Actuarial Risk Management 1 | 30 | Autumn | 7 |
| MACT9220 | Actuarial Risk Management 2 | 30 | Autumn & Spring | 7 |
| MACT9530 | Communications | 15 | Autumn & Spring | 7 |

You must take 105 credits from the following optional modules:

| Optional modules: | MODULE TITLE | CREDIT AMOUNT | TERM TAUGHT | CREDIT LEVEL |
|--------------------------|---|----------------------|--------------------|---------------------|
| MACT9090 | Enterprise Risk Management | 30 | Autumn & Spring | 7 |
| MACT9120 | Life Insurance | 30 | Autumn & Spring | 7 |
| MACT9150 | Finance and Investment | 30 | Autumn & Spring | 7 |
| MACT9170 | General Insurance Reserving and Capital Modelling | 30 | Autumn & Spring | 7 |

| | | | | |
|--------------------------|---------------------------|----|-----------------|---|
| MACT9180 | General Insurance Pricing | 30 | Autumn & Spring | 7 |
| MACT9500 | Prophet | 15 | Spring | 7 |
| MACT9520 | Financial Modelling | 15 | Year-long | 7 |
| MAST9420 | Data Science with R | 15 | Autumn | 7 |

150 credits (12 months) – PLACEMENT MODULES (Year 2)

You must take the following compulsory modules (150 credits):

| Compulsory modules: | MODULE TITLE | CREDIT AMOUNT | TERM TAUGHT | CREDIT LEVEL |
|----------------------------|--|----------------------|--------------------|---------------------|
| MAST7801 | Industrial Placement Report and Presentation | 30 | Year-long | 7 |
| MAST7805 * | Industrial Placement Experience | 120 | Year-long | 7 |

*Module cannot be compensated or condoned

STAGE 1 – 120 credits – credit imbalance permitted (up to 75 credits per term)

You must take the following compulsory modules (105 credits):

| Compulsory modules: | MODULE TITLE | CREDIT AMOUNT | TERM TAUGHT | CREDIT LEVEL |
|----------------------------|---|----------------------|--------------------|---------------------|
| MAST7011 | Bayesian Statistics with Stan and Python | 15 | Spring | 7 |
| MAST7012 | Statistical Consultancy and Data Presentation | 15 | Spring | 7 |
| MAST7053 | Statistical Learning for Data Scientists | 15 | Spring | 7 |
| MAST7291 | Probability and Statistics for Data Science | 30 | Autumn | 7 |
| MAST8820 | Statistical Data Modelling | 15 | Autumn | 7 |
| MAST9420 | Data Science with R | 15 | Autumn | 7 |

You must take 15 credits from the following optional modules:

| Optional modules: | MODULE TITLE | CREDIT AMOUNT | TERM TAUGHT | CREDIT LEVEL |
|--------------------------|-------------------------------|----------------------|--------------------|---------------------|
| MAST6015 | Data Collection and Analytics | 15 | Autumn | 6 |
| MAST9960 | Deep Learning with Python | 15 | Spring | 7 |

PLUS you must take the following non-contributory compulsory module:

| Compulsory module: | MODULE TITLE | CREDIT AMOUNT | TERM TAUGHT | CREDIT LEVEL |
|---------------------------|----------------------------------|----------------------|--------------------|---------------------|
| WMATH867 | Data Science Project Preparation | 0 | Autumn & Spring | W |

All students can take the following non-contributory optional module:

| Optional module: | MODULE TITLE | CREDIT AMOUNT | TERM TAUGHT | CREDIT LEVEL |
|--------------------------|-----------------------------------|----------------------|--------------------|---------------------|
| WMATH015 | SMSAS Industrial Practice Masters | 0 | Autumn & Spring | W |

STAGE 2 – 60 credits

You must take the following compulsory module (60 credits):

| Compulsory module: | MODULE TITLE | CREDIT AMOUNT | TERM TAUGHT | CREDIT LEVEL |
|---------------------------|---------------------|----------------------|--------------------|---------------------|
| MAST8670 | Project | 60 | Year-long | 7 |

STATISTICAL DATA SCIENCE WITH AN INDUSTRIAL PLACEMENT PSDS0001P2MS-F**STAGE 1 – 120 credits (12 months) – credit imbalance permitted (up to 75 credits per term)****You must take the following compulsory modules (105 credits):**

| Compulsory modules: | MODULE TITLE | CREDIT AMOUNT | TERM TAUGHT | CREDIT LEVEL |
|----------------------------|---|----------------------|--------------------|---------------------|
| MAST7011 | Bayesian Statistics with Stan and Python | 15 | Spring | 7 |
| MAST7012 | Statistical Consultancy and Data Presentation | 15 | Spring | 7 |
| MAST7053 | Statistical Learning for Data Scientists | 15 | Spring | 7 |
| MAST7291 | Probability and Statistics for Data Science | 30 | Autumn | 7 |
| MAST8820 | Statistical Data Modelling | 15 | Autumn | 7 |
| MAST9420 | Data Science with R | 15 | Autumn | 7 |

You must take 15 credits from the following optional modules:

| Optional modules: | MODULE TITLE | CREDIT AMOUNT | TERM TAUGHT | CREDIT LEVEL |
|--------------------------|-------------------------------|----------------------|--------------------|---------------------|
| MAST6015 | Data Collection and Analytics | 15 | Autumn | 6 |
| MAST9960 | Deep Learning with Python | 15 | Spring | 7 |

PLUS you must take the following non-contributory compulsory module:

| Compulsory module: | MODULE TITLE | CREDIT AMOUNT | TERM TAUGHT | CREDIT LEVEL |
|---------------------------|---|----------------------|--------------------|---------------------|
| WMATH975 | Short Dissertation (Statistics) Preparation | 0 | Autumn & Spring | W |

All students can also take the following non-contributory optional module:

| Optional module: | MODULE TITLE | CREDIT AMOUNT | TERM TAUGHT | CREDIT LEVEL |
|--------------------------|-----------------------------------|----------------------|--------------------|---------------------|
| WMATH015 | SMSAS Industrial Practice Masters | 0 | Autumn & Spring | W |

STAGE 2 – 180 credits (Year 2)**You must take the following compulsory modules (180 credits):**

| Compulsory modules: | MODULE TITLE | CREDIT AMOUNT | TERM TAUGHT | CREDIT LEVEL |
|----------------------------|--|----------------------|--------------------|---------------------|
| MAST7801 | Industrial Placement Report and Presentation | 30 | Year-long | 7 |
| MAST7805 * | Industrial Placement Experience (12 months) | 120 | Year-long | 7 |
| MAST9750 | Short Dissertation (Statistics) | 30 | Year-long | 7 |

*Module cannot be compensated or condoned