

# IB3FM-15 Forensic Accounting using Data Analytics

**25/26**

**Department**

Warwick Business School

**Level**

Undergraduate Level 3

**Module leader**

Dhanya Krishna Kumar

**Credit value**

15

**Module duration**

10 weeks

**Assessment**

Multiple

**Study location**

University of Warwick main campus, Coventry

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## Description

### Introductory description

This is an elective module available for WBS and non-WBS students. To find detailed availability and to apply for this module, log in to [my.wbs.ac.uk](http://my.wbs.ac.uk) using your normal IT login details and apply via the my.wbs module application system. Once you've secured a place on my.wbs you should apply via your home department's usual process, which usually takes place via eVision. Note that you do not require the module leader's permission to study a WBS module, so please do not contact them to request it.

This comprehensive module on financial misreporting detection and prediction combines theoretical foundations with practical applications, delivered through integrated lectures and hands-on seminars. Beginning with the fundamental distinction between financial misreporting and earnings management, the course progresses through data analytics techniques, predictive modelling, and culminates in ethical considerations. Students develop practical skills in manipulating financial databases and constructing detection models using programming tools, with a focus on publicly listed corporations. Through hands-on experience with financial databases and industry-standard tools, students learn to identify potential misreporting instances and forecast future occurrences, preparing them for real-world applications in financial analysis and regulatory compliance.

## Module aims

The objective of this module is to enhance students' comprehension and insight regarding the phenomenon of misreporting in the corporate sector. It seeks to answer pivotal questions: Why do certain corporations engage in such malpractices? What repercussions follow? What ethical dilemmas arise from accounting misconduct? Specifically, the module is designed to furnish students with the essential knowledge and competencies required for identifying and forecasting instances of misreporting.

Upon completion of this module, students will have developed an understanding of the distinction between earnings management and misreporting. They will explore the driving factors behind these practices and their implications for various stakeholders and the broader economic landscape. The module focuses on the study of various empirical methodologies to detect and anticipate earnings management and misreporting.

A key aspect of the module is the in-depth exploration of the strengths and limitations of these empirical tools. A primary focus is placed on enabling students to proficiently implement, apply, and estimate various detection and prediction models, while also fostering the ability to critically analyse the outcomes of these models. This process will involve the use of extensive financial databases and the application of statistical tools to estimate these models, thereby ensuring that students not only understand the theoretical underpinnings but also acquire practical skills in execution and analysis.

## Outline syllabus

This is an indicative module outline only to give an indication of the sort of topics that may be covered. Actual sessions held may differ.

- Why firms commit misreporting and current methods of detection
- Financial misreporting
- Regulations on financial misreporting
- The cost of misreporting
- The benefits of misreporting
- Gatekeepers (e.g. Auditors, Analysts, Institutional investors)
- Ethical issues
- Replicating the existing literature and evaluating the benefits and cost associated with choosing any model
- Corporate misreporting and tools to detect misreporting.
- The concept of earnings management
- The difference between earnings management and financial misreporting
- The limitations of existing models in misclassifying the fraud firms as non-fraud
- Changes in literature on financial misreporting.

## Learning outcomes

By the end of the module, students should be able to:

- Evaluate and critically analyse existing literature on earnings management and misreporting, and fraud.
- Estimate misreporting and fraud prediction models, and misreporting forecasting models.
- Recognize the advantages and disadvantages of each model and in which case each model is more useful.
- Explain key detection/prediction models and reflect critically on the limitations of those models and the assumptions that underpin them.
- Interpret empirical evidence and offer coherent insights into firm's financial reporting quality and likelihood of (future) misreporting.
- Communicate complex ideas effectively, in writing and through data visualization techniques.

## Indicative reading list

[Reading lists can be found in Talis](#)

## Research element

Reading and critically evaluating relevant literature

Use basic Stata commands to navigate, manage, and manipulate data.

Clean and transform raw data into usable formats for analysis using Stata.

Use descriptive statistics to summarize and explore data in Stata.

Use Stata to conduct advanced statistical analysis and interpret results.

Develop clear and concise research reports and papers that incorporate Stata output and analysis.

## Interdisciplinary

The module is combination of Accounting and Ethical (from a lawyer's perspective) modules.

## Subject specific skills

Critically evaluate misreporting and fraud detection and prediction models.

Critically interpret and evaluate the outcome of the different models.

Write informed reports evaluating firm's likelihood of having manipulated earnings or misreported (i.e., detection/prediction).

## Transferable skills

Work collaboratively with others to estimate earnings management detection and misreporting prediction models.

Manage time effectively to meet research project deadlines. Contribute effectively to class discussions.

Interpreting and critically evaluating financial accounting archival research. Apply best practices in accounting research.

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# Study

## Study time

Type	Required
Lectures	10 sessions of 1 hour (7%)
Supervised practical classes	9 sessions of 2 hours (12%)
Private study	49 hours (33%)
Assessment	73 hours (49%)
Total	150 hours

## Private study description

Directed reading; preparation ahead of teaching sessions, private study.

## Costs

Category	Description	Funded by	Cost to student
IT and software	Due to the nature of the module students will require access to laptops during workshops (tablets and iPads may not have the required functionality for the software used).	Student	

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## Assessment

You do not need to pass all assessment components to pass the module.

### Assessment group A

	Weighting	Study time	Eligible for self-certification
Individual Assignment	90%	65 hours	Yes (extension)
Participation	10%	8 hours	No

### Assessment group R

	Weighting	Study time	Eligible for self-certification
Individual Assignment	100%		Yes (extension)

## Feedback on assessment

Feedback will be provided via my.wbs.

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## Availability

### Pre-requisites

To take this module, you must have passed:

- Any of
  - [IB146-15 Accounting for Business](#)
  - [IB124-15 Introduction to Financial Accounting](#)
  - [IB133-15 Foundations of Accounting](#)
  - [IB2D3-15 Accounting in Practice](#)

### Courses

This module is Optional for:

- UIBA-N20B BSc in Management
  - Year 3 of N20B Management
  - Year 3 of N20B Management
  - Year 3 of N20B Management
  - Year 3 of N20B Management
  - Year 3 of N23K Management with Accounting
  - Year 3 of N23K Management with Accounting
  - Year 3 of N234 Management with Digital Business
  - Year 3 of N234 Management with Digital Business
  - Year 3 of N235 Management with Entrepreneurship
  - Year 3 of N235 Management with Entrepreneurship
  - Year 3 of N232 Management with Finance
  - Year 3 of N232 Management with Finance
  - Year 3 of N252 Management with Marketing
  - Year 3 of N252 Management with Marketing
  - Year 3 of N23L Management with Strategy and Organisation
  - Year 3 of N23L Management with Strategy and Organisation
- Year 3 of UIBA-N400 Undergraduate Accounting and Finance
- UIBA-N404 Undergraduate Accounting and Finance (with Foundation Year and Placement/Undergraduate Partnership Programme)
  - Year 5 of N4N7 Accounting and Finance (Foundation Year and Intercalated)
  - Year 5 of N404 Accounting and Finance (Foundation Year and Placement)
  - Year 5 of N405 Accounting and Finance (Foundation Year and UPP)
  - Year 5 of N403 Accounting and Finance (with Foundation Year)
- Year 4 of UIBA-N403 Undergraduate Accounting and Finance (with Foundation Year)
- UIBA-N401 Undergraduate Accounting and Finance (with Placement Year/Undergraduate Partnership Programme)

- Year 4 of N401 Accounting and Finance (Placement)
  - Year 4 of N402 Accounting and Finance (Undergraduate Partnership Programme)
- Year 3 of UCSA-I1N1 Undergraduate Computer Science with Business Studies
- Year 4 of UCSA-I1NA Undergraduate Computer Science with Business Studies (with Intercalated Year)
- Year 1 of UIOA-EEU Undergraduate EU Exchange
- Year 4 of UGEA-RN21 Undergraduate German and Business Studies
- Year 3 of UIPA-L8N1 Undergraduate Global Sustainable Development and Business
- Year 4 of UIPA-L8N2 Undergraduate Global Sustainable Development and Business Studies (with Intercalated Year)
- UIBA-N20F Undergraduate International Management
  - Year 3 of N20F International Management
  - Year 3 of N20F International Management
  - Year 3 of N20S International Management (with Accounting)
  - Year 3 of N20T International Management (with Chinese)
  - Year 3 of N20P International Management (with Entrepreneurship)
  - Year 3 of N20M International Management (with Finance)
  - Year 3 of N20U International Management (with French)
  - Year 3 of N20L International Management (with Marketing)
  - Year 3 of N20V International Management (with Spanish)
  - Year 3 of N20W International Management (with Strategy and Organisation)
  - Year 3 of N20N International Management with Digital Business
  - Year 3 of N20E Management (with Foundation Year)
  - Year 3 of N234 Management with Digital Business
- UIBA-N220 Undergraduate International Management (with Foundation Year)
  - Year 5 of N220 International Management (with Foundation Year)
  - Year 5 of N221 International Management with Accounting (with Foundation Year)
  - Year 5 of N226 International Management with Chinese (with Foundation Year)
  - Year 5 of N223 International Management with Digital Business (with Foundation Year)
  - Year 5 of N224 International Management with Entrepreneurship (with Foundation Year)
  - Year 5 of N222 International Management with Finance (with Foundation Year)
  - Year 5 of N227 International Management with French (with Foundation Year)
  - Year 5 of N225 International Management with Marketing (with Foundation Year)
  - Year 5 of N228 International Management with Spanish (with Foundation Year)
  - Year 5 of N229 International Management with Strategy and Organisation (with Foundation Year)
- UIBA-N20J Undergraduate Management (with Foundation Year and Placement Year/Undergraduate Partnership Programme)
  - Year 4 of N20J Management (Foundation Year and Placement)
  - Year 4 of N20K Management (Foundation Year and UPP)
  - Year 4 of N23H Management with Digital Business (with Foundation Year and Placement Year)
  - Year 4 of N23J Management with Entrepreneurship (with Foundation Year and Placement Year)
  - Year 4 of N23G Management with Finance (with Foundation Year and Placement)

- Year)
- Year 4 of N255 Management with Marketing (with Foundation Year and Placement Year)
- UIBA-N20E Undergraduate Management (with Foundation Year)
  - Year 4 of N20E Management (with Foundation Year)
  - Year 4 of N23N Management with Accounting (with Foundation Year and Placement Year)
  - Year 4 of N23M Management with Accounting (with Foundation Year)
  - Year 4 of N23E Management with Digital Business (with Foundation Year)
  - Year 4 of N23F Management with Entrepreneurship (with Foundation Year)
  - Year 4 of N23D Management with Finance (with Foundation Year)
  - Year 4 of N252 Management with Marketing
  - Year 4 of N254 Management with Marketing (with Foundation Year)
  - Year 4 of N23P Management with Strategy and Organisation (with Foundation Year)
- UIBA-N20C Undergraduate Management (with Placement Year/Undergraduate Partnership Programme)
  - Year 4 of N20M International Management (with Finance)
  - Year 4 of N20B Management
  - Year 4 of N20D Management (Undergraduate Partnership Programme)
  - Year 4 of N20C Management (with Placement Year)
  - Year 4 of N20Q Management with Accounting (with Placement Year)
  - Year 4 of N236 Management with Digital Business (with Placement Year)
  - Year 4 of N237 Management with Entrepreneurship (with Placement Year)
  - Year 4 of N232 Management with Finance
  - Year 4 of N233 Management with Finance (with Placement Year)
  - Year 4 of N253 Management with Marketing (with Placement Year)
  - Year 4 of N23L Management with Strategy and Organisation
  - Year 4 of N20R Management with Strategy and Organisation (with Placement Year)
- Year 3 of UMAA-G1NC Undergraduate Mathematics and Business Studies
- Year 4 of UMAA-G1N2 Undergraduate Mathematics and Business Studies (with Intercalated Year)
- UIOA-EOS Undergraduate Overseas Exchange
  - Year 1 of UEOS Undergraduate Overseas Exchange
  - Year 1 of UEOS Undergraduate Overseas Exchange
- Year 4 of UPXA-F3ND Undergraduate Physics and Business Studies (with Intercalated Year)
- Year 3 of UPXA-F3N2 Undergraduate Physics with Business Studies
- Year 1 of UIOA-EUS Undergraduate USA Exchange