# uc3m Universidad Carlos III de Madrid

# **Business Modeling**

Academic Year: (2022 / 2023) Review date: 08-05-2022

Department assigned to the subject:

Coordinating teacher: CAMINO BLASCO, DAVID

Type: Electives ECTS Credits: 2.0

Year: 1 Semester:

## REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)

None

#### **OBJECTIVES**

This course provides a basic and practical understanding of how to prepare a financial plan (budgeted financial statements), which is the core part of a business plan. Financial planning is a continuous process of directing and allocating financial resources to meet strategic goals and objectives. The output from financial planning takes the form of Budgeted Financial Statements, such as:

- Budgeted Income Statement (Profit and Loss Budget)
- Net Working Capital Budget
- Cash-Flow Statement
- Budgeted Balance Sheet

After this course students should be able to complete the fore mentioned Budgeted Financial Statements but also to conduct a complementary analysis such the Ratio Analysis and Scenario Analysis by using the financial planning outputs, to consider the combined effects of the firm¿s investment and financing

decisions and to anticipate events that could upset the firm in order to design corrective measures. In addition, students perform valuation and profitability analysis to help inform the decision of the feasibility of the project.

# **DESCRIPTION OF CONTENTS: PROGRAMME**

CClass 1: Presentation and general overview of the course. Theoretical introduction to the financial planning process as a management tool for decision making. A short placement test is conducted in order to test the audience background (optional).

Additional emphasis on best practices when modeling. Model structure, format and key components.

Cases/Exercises: A sequence of in-class exercises designed to gain familiarity with basic functions of Microsoft Excel as well as with the scaffolding of a financial model.

Class 2: Deep dive on customer acquisition projection, sales projection as well as expenses estimates. The objective is to be able to build a parameter-depending model structure at the income and expense level that later on feeds the rest of the model.

Cases/Exercises: Case study I is introduced and it will be solved by using Excel spreadsheet and or Google Sheets.

The main aim of this first and basic case study is to focus on the different alternatives available to project the top line of any financial model. By using the spreadsheet, students have to design two key components of the Income Statement:

- Projected sales and expenses
- Calculate break-even point using different alternatives

Class 3: The next block of variables to be estimated: net working capital needs and capital expenditures. We analyze how to effectively model and estimate these variables and the different ways in which the task can be performed. With these variables being modelled, an initial version of the balance sheet statement is completed.

Readings: References, teacher's Slides

Cases/Exercises: A series of in-class exercises designed to practice how to model the different components of the net working capital needs. Exercises allow familiarity with the most frequently used techniques to model capital expenditures.

Class 4: In this class, we complete the financial statements section by learning how to put together the cash flow statement. Cash flow as an output statement of previously modelled components. We analyze in this class the case of debt financing and make the necessary adjustments to both the balance sheet statement, income statement and the reflection on the cash flow statement.

We continue the class by learning the different ways to perform sensitivity analysis and how to create and test scenarios. We use different tools such as goal seek, scenario manager or sensitivity tables.

Readings: References, teacher's Slides

Cases/Exercises: A series of in-class exercises designed to practice how to calculate cash break-even points with the cash flow statement. Another exercise to practice the modeling of debt financing and repayment. Lastly, different exercises illustrate the use of the Microsoft Excel tools for sensitivity analysis.

Class 5: During the last class we introduce some final elements of the financial modeling such as valuation and profitability metrics. We learn how to calculate the most frequently used variables to share profitability of a project.

In the last class, students present in teams the models that they have worked on, walking the rest of the class on the structure, hypothesis and outputs of their models.

Readings: References, teacher's Slides

Cases/Exercises: An exercise on valuation and profitability analysis to learn the main Microsoft Excel functions to perform these tasks.

#### LEARNING ACTIVITIES AND METHODOLOGY

## **LEARNING ACTIVITIES**

Placement test
Case study I and II
Mock exam (after case study I)
Activities proposed for autonomous work
Active participation and attendance
Final exam

## **TEACHING METHODOLOGIES**

Exhibitions in the teacher's class with support of computer and audiovisual media, in which the main concepts of the subject are developed and the bibliography is provided to complement the students' learning.

Critical reading of texts recommended by the teacher: press articles, economic reports, textbooks and academic articles, either for further discussion in class, or to expand and consolidate the knowledge of the subject. Specifically, the topic of corporate sustainability, in general, and budgetary sustainability, in particular, will be addressed. Solution of practical cases, problems, etc., proposed by the teacher.

Exhibition and discussion in class, under the teacher's moderation of topics related to the content of the subject, as well as case studies.

Preparation of papers and reports individually or in groups.

# ASSESSMENT SYSTEM

The evaluation of the course will be continuous and inclusive, weighing the final exam only 60% on the total grade. The remaining 40% will be evaluated on the basis of activities proposed for autonomous work, mock exam, etc. The assistance and active participation in class will be also considered.

The final exam will consist of two weighed parts:

List of short- questions (40%): Individual

Case study solution run in spreadsheet (60%): Individual

% end-of-term-examination:	60
% of continuous assessment (assigments, laboratory, practicals):	40

# BASIC BIBLIOGRAPHY

- Brealey, R., S. C. Myers and Allen Principles of Corporate Finance, McGraw-Hill/Irwin, 2011
- Higgins, R. C Analysis for Financial Management, Irvin McGraw-Hill, 2008