Aalto University

Hands-On Analytics on Accounting Information Systems (ABL-C1102)

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Basic information

a. **Name of the course:** Hands-On Analytics on Accounting Information Systems

b. **Course code:** ABL-C1102

c. **Amount of ECTS:** 6

d. **Teaching period(s) when the course is taught:** IV Otaniemi Campus

e. **Language of the course:** English

f. **Target group:** B.Sc. course in accounting, M.Sc. course in accounting (available as electives), open to other students at both bachelor and master level

g. **Is the course elective or mandatory:** Advanced Elective

h. **Responsible Teachers:** Vikash Kumar Sinha

i. **Meeting with teachers:** request in advance

Pre-requisites and Links

Pre-requisites: None
Links: The course prepares students to take other advanced courses in audit/data analytics (such as ABL-C1103 Data Analytics for Accounting and Audit, ABL-E1300 Big Data Analysis in Accounting etc.)

Objectives and intended learning outcomes (ILO)

After the course students are able to:
(1) understand the essentials of sourcing, implementing and using AIS (The core ERP systems module)
(2) apply transaction processes (hands-on) by using a modern, Finnish AIS solution (Procountor by Accountor) (and also get the opportunity to obtain the official Procounter professional certification)
(3) analyze key AIS risks (e.g., fraud) and apply risk management strategies/frameworks
(4) understand the principles of auditing of AIS and internal controls,
(5) apply SQL hands-on (and be certified in this competency by Data Camp).

Content

The course covers understanding of Accounting Information Systems (AIS), managerial issues such as business process reengineering, deciding on built or buy of AIS, planning and implementing of AIS, managing AIS projects, as well as an overview of the most important AIS modules. The course also includes aspects delineating impacts of AIS on strategic management accounting, on organizational performance and on the accounting profession. The course includes a unique collaboration with an AIS firm – Accountor. Accountor provide training materials and a virtual learning environment in their world-class Procountor AIS. Top performers will get the chance to obtain the official Procountor certification free of charge. Last but not the least, students learn SQL and obtain an SQL certification through data camp.

Assessment and grading

Break-up and summary

    a.   Hands-On Practice assignments - *Practice assignments + SQL Certification* (group and individual) (50%)

    b.   Case assignments (group) (20%)

    c.   Exam (individual) (30%)

Final Grade: 0 – 5 (You need to pass all parts of the grading with at least 50% of the maximum points available – a – 25, b – 10, c- 15)

Details

Practice assignments + SQL Certification (individual/group). Modules altogether contain a total of six (6) Procountor assignments (group, graded pass/fail), a certification test (individual, bonus points), and a written reflection report (group, graded). The Accountor five (group) assignments contribute to are and written group report is graded out of 25[1] points and the SQL certificate (individual, graded pass/fail) corresponds to 25 points. In summary, the Accountor + SQL certification assignments contribute 50/100 (fifty out of one hundred) points to the final grade.The students have the possibility to pass the certification test for Procounter – The test is tough and in past only less than 10% students have passed the test. However, students who pass the certification can get upto a maximum of 10 bonus points that will result in upgrade of their grades.

Case assignments (group). The case assignments contribute 20/100 (twenty out of one hundred) points to the final grade. It is to be conducted in groups of a maximum of three students (doing the project as an individual is possible but discouraged due to an over-proportional amount of work). Cases correspond to the following points: Case System Documentation 4 points, Case AIS Development 6 points, Case Fraud 4 points, and Case Risk Management 6 points.

Final Exam (individual). The final (and retake) exam contributes to 30/100 (thirty out of one hundred) points to the final grade. It will be administered through MyCourses and will take place online. The time pressure is high and questions will be selected from a randomized question bank to assure the measurement of individual and not colluding student group performance.

Opportunity for bonus points (subject to teacher's discretion each year)

Quizzes (individual). Every module provides several self-assessment opportunities as quizzes to assess whether you understood the content and are ready to proceed to graded activities, the next section, and the final exam. By doing quizzes, you may earn 5 bonus points. Note that earning the points requires passing the quizzes with 80% off the possible points (5 attempts per quiz) and that you complete the quiz within the suggested timeframe for the respective module. The existence of bonus points also means that there is no other possibility to earn extra points (e.g., no extra assignments after the exam for achieving a higher grade - this is in any case unethical as it prevents equal treatment of all

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[1] The five assignments from accountor module (one in Accountor module, three in Module II and one in Module V) need to be reflected in the final group reflection where grades of 25 points are provided. It is groups responsibility to follow the instructions of the five assignments and complete them.

students). NOTE: There are 5 quizzes, and you may get a maximum of 5 bonus points if you would finish all of them successfully.

Final Course Grade

- The final course grade is the weighted sum of Practice assignments (50%), Case assignments (20%), Exam (30%), and Bonus points (15%) = 115 points. Please refer to the grade book (top left corner in the MyCourses environment) to follow your progress towards the final grade in real-time
- The points translate into the Aalto 0-5 grading scheme in the following manner: 5 (115^{2}-90 points), 4 (89-80 points), 3 (79-70 points), 2 (69-60 points), 1 (59-50 points) and 0/fail (49-0 points)
- You need to pass all parts of the grading with at least 50% of the maximum points available: Accountor + SQL assignments with 25 points, Case assignments with 10 points and the Exam with 15 points. Bonus points are only considered when passing these hurdles.

Group Work

- The Procountor assignment, the Procountor reflection reports, and the case assignments are group work. Please select a group as soon as possible, but the very latest by the end of Module 1.
- Not pulling your own weight in group work will lead to a significant downgrading of your individual grade. Teams are advised to inform the instructor ASAP via email in case they experience dysfunctional group members.

Materials

Prescribed Book: Romney, Marshall B., Paul John Steinbart. Accounting information systems. Vol. 14: Prentice Hall, 2018
Additional material (teacher's slides, cases, instructions and material for Data camp and Accountor) will be provided through MyCourses and other suitable media.

The course is divided into seven modules. All numbered modules (I – IV) contain bonus quizzes[1].

Module I – Conceptual foundations of AIS: value of data and information, business processes and information, AIS and its link with corporate strategy and its role in value chains, organizations use of ERP, data flow diagrams, flow charts, business process diagrams
(Chapter 1, 2, and 3 from the prescribed book, teacher's slides/material and case 1)

Module II – Transaction cycle: AIS role in documenting transaction cycles (Revenue, expenditure, production, HR and payroll cycles), Identify threats to data integrity in each of the transaction cycles and understand their managerial implications
(Chapter 12, 13, 14, and 15 from the prescribed book, teacher's slides/material)

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[2] Subject to inclusion of bonus points based on teacher's discretion

Module III – AIS development and investment process: System development phases, AIS development strategies, System design implementation and operation, Change and employee behavior
(Chapter 20, 21, and 22 from the prescribed book, teacher's slides/material and case 2)

Module IV – AIS fraud: Computer fraud and its detection
(Chapter 5 and 6 from the prescribed book, teacher's slides/material and case 3)

Module V – AIS risk management: Internal controls and risk management processes, COBIT, COSO IC and ERM frameworks
(Chapter 7, 8, and 10 from the prescribed book, teacher's slides/material and case 4)

Hands on **Module – Accountor:** six practical hands-on assignments
Assignment 1: Basic setting
Assignment 2: HRM and Payroll Cycle (Module II)
Assignment 3: Revenue Cycle (Module II)
Assignment 4: Expenditure Cycle (Module II)
Assignment 5: Management Accounting and Controls (Module V)
Assignment 6: Charts and Analysis (Module IV)

Hands on **Module – SQL:** relational databases and relational database management systems (RDBMS); XBRL potential and applications, SQL basics and its applications, Understand and run basic SQL in practice
(chapter 4 of the book, Data camp module, teacher's slides)

Note: How to use Data camp and Accountor are explained during the course.

Schedule[3]

The course is divided over six weeks. The actual start time of the course is indicated in the Sisu system and on mycourses. Either live or pre-recorded lectures are provided for each module[4]. A typical week-wise schedule of the course is provided below.

Week	Monday	Tuesday	Wednesday	Thursday	Friday	Accountor	SQL
1			Module I and Introduction (2nd March 10:00-12:00)				
2		Module III: Investment (8th March 10:00-12:00)		Case 1 (Module I)			
3			Module II: Transactions (16th March 10:00-12:00)	Case 2 (Module III)			
4			Module IV: Fraud (23rd March 10:00-12:00)	Case 3 (Module IV)			
5			Module V: Risk	Case 4 (Module V)			

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[3] All times are in EET (Helsinki time - UTC/GMT + 2 hrs). Also, note that the DST changes will affect the time starting 27 March.
[4] Subject to change every year based on teacher's discretion

			Management (30th March 10:00-12:00)				
6			Wrap-up (6th April 10:00-12:00)		Accountor SQL	Test	

🟩	Lectures
🟧	Due Assignments

Course workload (in hours)

The workload necessary to complete the course is 162 hours translating to 6 ECTS.

Cases - 20 hours
Contact teaching - 12 hours
SQL Module - 25 hours
Accountor Module - 25 hours
Exam - 1,5 hours
Independent Study (includes all materials suggested in MyCourses including pre-recorded lectures, reading book chapters and others) - 78,5 hours

TOTAL - 162 hours

Feedback

There are several feedback mechanisms to students in this course. I will outline them individually below:

- **In-class feedback (formative):** Lectures include regular discussions. This approach allows for directly addressing problems in understanding when they arise. Students are encouraged to ask questions and provide feedback.

- **Individual and group assignments (summative):** Feedback is given on these assignments through the MyCourses feedback provision feature. Students are encouraged to try all assignments and address question they have that prevent them to arrive at a solution as part of the assignment. Assignments are evaluated in terms of the effort students put into them – not their correctness – as trying is seen more important for learning than copying a correct solution from someone else (which might take place in the absence of right incentives).

- **Final Exam (summative):** The final exam provides students with a summative assessment of their performance in the score.

There are three feedback mechanisms to the teacher in this course

- **Final anonymous feedback:** The final official Aalto feedback form is complemented with additional questions on the pedagogical methods used, especially regarding assignments as well as individual feedback to guest lecturers and co-teachers. The feedback form is filled out by

students during the last class before exam issues are discussed. This encourages a high response rate (based on past experiences, this approach results in a 40-60% response rate). The feedback will be assessed comprehensively, and good as well as bad/improvement related feedback is evaluated in combination to assure that potential action is based on representative feedback and not on individual opinions that might differ significantly from the consensus.

- **Formal and informal feedback during lectures:** Feedback is encouraged before every lecture (formal) or during the breaks (informal). Students are also encouraged to write emails if they wish so. A direct contact between teacher and student has worked well in the past with my other courses and students have also indicated that they could provide suggestions freely to the lecturer.

- **Indirect feedback on the progress of students through learning assessment approaches:** Take-home assignments (individual as well as group work), in-class discussions and exams provide feedback to the teacher as they indicate progress of students on different learning objectives as well as topics. This allows for timely action during class by adding revision sessions, brief teaching videos, as well as additional exercises where needed and where wanted.