

BN2289 – ENTERPRISE RESOURCES PLANNING

Module Number: BN2289

Module Title: Enterprise Resources Planning

Number of Aston Credits: 10

Total Number of ECTS Credits: 5
(European Credit Transfer)

Staff Member Responsible for the Module:

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Other Staff Contributing to the Module: None

Pre-Requisite(s) for the Module: None

Module Learning Outcomes:

This module provides a broad understanding of the functionality and capabilities of Enterprise Resource Planning (ERP) Systems.

On successful completion of the module students will be able to:

- demonstrate an appreciation of the core interactions and dependencies that exist between the key functions of a business;
- evaluate the role of information systems in the support of business functions and, particularly, cross-functional business processes;
- describe the way Enterprise planning Systems have developed, their functional capabilities and the role of the underpinning technologies;
- contrast the ERP integrated approach with that of 'best of breed' in relation to implementation, operational costs and performance;
- critically analyse the role of business process re-engineering (BRP) in ERP implementation;

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- discuss the ERP success rates, implementation strategies and related issues;
- contrast recent extensions of ERP into Advanced Planning Systems (APS), Supply Chain Management (SCM), Product Data Management (PDM) and the impact of web technologies.
- Identify the key players in the ERP market.

Module Content:

The ability to appreciate the value and challenge of ERP systems depends on the student understanding the interdependencies that are present between the functions in all businesses. Traditionally information systems were developed for the separate functions of the business leading to inevitable deficiencies in their ability to support the integrating processes that cross functional boundaries. The rationale behind the development of ERP has been presented as being based on this latter business model although it grew out of the integrated manufacturing systems of the 1980's. It has also been presented as being a natural consequence of the development of new underpinning information technologies, particularly client-server architecture although the earliest systems were mainframe-based. The module will examine these perspectives in order to develop an understanding of the role, functionality, capabilities and implementation challenges of modern ERP systems. An SAP simulation will be used to give the students hands on experience on how real ERP systems work.

Specific topics covered include:

- Business functions, processes and information systems
- ERP development history (MRP to ERP) and enabling technologies (relational databases, client-server, 4GL, OSA etc)
- Functionality and role of information systems in the core business processes that involve the key functions of Sales, Manufacturing and Finance
- Role of information systems in support functions like Design & Development, HRM, asset management etc.
- Advanced capabilities and functionality: examples from supply chain management, scheduling etc
- Implementation questions: to BRP or to ERP? Best of breed or single supplier? Is single instance ERP (one database and one application) feasible?

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- Implementation issues and strategies: tailoring, application development, training & support, project management, costs, continuous improvement.
- ERP components: Business Intelligence, SCM, CRM, SRM, PLM
- ERP system drive: This will be hands on experience in a simulated ERP environment

International Dimensions:

International aspects are fundamental to ERP as the focus of many implementations is to provide support for multi-site, multi-company global operation. This has particular relevance to the financial and decision support systems. Recent extensions to the functionality of ERP to provide supply chain management facilities are global in context and the rapid development of web transactions and reporting capabilities have also been aimed at international operations.

Corporate Connections:

Contact with current/past KTP companies is used to provide students with exposure to the current problems of implementing and operating ERP systems. The case exercise that forms the core of the coursework is based on one such company. Aston is a member of the SAP University Alliance and a visit from a SAP consultant may be arranged. Students will have access to a simulated SAP environment and will act as if they are driving business decisions for a manufacturer. Using this simulated environment will help them to learn how a real ERP system works. Additionally, having experience of an ERP system will increase their appeal for prospective placement employers.

Links to Research:

There is active research in the OIM group on the understanding of how ERP systems improve operations, as well as into the integration of ERP systems to simulation systems.

Learning and Teaching Rationale and Methods:

To understand the benefits and role of ERP it is necessary to put the use of the system in the context of the normal operational processes of a business. This is achieved here by the in-depth analysis of the potential for application of ERP in a real company (the subject of ERP implementation through an ABS/KTP programme). This is the basis of the group project. The students have to develop the case for ERP through analysis of the impact ERP would have on the company's competitive position, the changes necessary to its business

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processes and the issues that must be considered for successful implementation. Conventional lectures, directed reading and tutorials are also employed. The completed project is assessed the submission of a portfolio of all working materials. The standard ABS system for peer assessment will be used. The group size is set at 5. Tutorial sessions will be used to support the case exercise and the lectured material.

The rationale for this teaching method is to combine the theory of ERP systems with the practice of implementing them and analysing the impact it has on business practices.

Contact and directed learning:

Lectures	11 hours
Tutorials	11 hours
Background & Directed study	26 hours
Group Design Exercise	40 hours
Revision	10 hours
Examination	2 hours
Total	100 hours

Ethical Approval:

This module does not require any primary research and no ethical approval will be necessary.

Assessment and Feedback Rationale and Methods:

The assessment is via a two-hour closed book examination (60%) and one piece of coursework (40%). In addition, completing the SAP exercises is a requisite and forms part of the coursework.

The coursework (40%) is group based and concerns the analysis of a case company business processes and the development of a proposal to justify the implementation of ERP in the firm. The analysis and design work are assessed through submission of report that documents the company analysis completed during the module. In addition to the covering the business analysis with annotated or modified copies of earlier milestone submissions it must provide additional material (in appropriate formats) to cover the specification and selection of a suitable ERP system and the business case for ERP in the case company. The report should be submitted via the coursework office.

As part of the report, students should complete (individually) the SAP exercises. Small groups are self-formed with 5 members. The standard ABS peer assessment of effort is used to determine distribution of the project marks

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together with an attendance record taken for the case-related lecture or tutorial sessions.

Any difficulties students may have with the effective working of the group should be brought to the lecturer's attention as soon as possible. Disputes over contribution can be resolved through team interviews with the lecturer or by recourse to the ABS group work arbitration procedure run by the Curriculum and Student Support Manager. It is essential that full records of meetings (Agendas, minutes, actions) and contributions are retained throughout the exercise.

Rationale: Group working is fundamental to the nature of this type of work and it mirrors the way in which it is done in industry. Working to specify an ERP system for an actual organisation is the best way to learn the different aspects of ERP specification, by learning by doing.

Students will receive formative assessment through the review of their report/portfolio on an on-going basis (tutorials), as well as revision sessions and feedback from the client organisation. Summative feedback will be provided through individual feedback on the content of the report after submitting, as well as a feedback to the whole class, highlighting the key strengths and weaknesses of the submitted work. A report on the exam will be made available to all students, with an analysis of aggregated performance on the different questions.