# Course Approval Form

**Action Requested:** (definitions available at website above)
- [ ] Create NEW
- [ ] Modify (check all that apply below)
- [ ] Inactivate

**Course Level:**
- [ ] Undergraduate
- [x] Graduate

**College/School:**
- School of Business

**Submitted by:**
- Rebecca Pierce

**Department:**
- MBA

**Ext:**
- 9663

**Email:**
- Rpierce4@gmu.edu

**Subject Code:**
- MBA

**Number:**
- 739

**Effective Term:**
- [x] Fall
- [ ] Spring
- [ ] Summer

**Year:**
- 2016

**Fulfills Mason Core Req?** (undergrad only)
- [ ] Currently fulfills requirement
- [ ] Submission in progress

**Title:**
- Current
  - Advanced Data Mining for Business Analytics

**Credits:**
- [ ] Fixed →
- Variable →
- Lec + Lab/Ret →
- to
- [ ] Other

**Repeat Status:**
- [x] Not Repeatable (NR)
- [ ] Repeatable within degree (RD)
- [ ] Repeatable within term (RT)
- [x] Max credits allowed: (required for STAT status only)

**Grade Mode:**
- [ ] Regular (A, B, C, etc.)
- [ ] Satisfactory/No Credit
- [ ] Special (A, B, C, etc. +IP)

**Schedule Type:**
- Lecture (LEC)
- Lab (LAB)
- Recitation (RCT)
- Internship (INT)
- Independent Study (IND)
- Seminar (SEM)
- Studio (STU)

**Prerequisite(s):**
- B or higher in MBA 738 or equivalent

**Corequisite(s):**

**Catalog Copy for NEW Courses Only** (Consult University Catalog for models)

**Description:**

<table>
<thead>
<tr>
<th>Description (No more than 80 words, use verb phrases and present tense)</th>
<th>Notes (List additional information for the course)</th>
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</thead>
</table>

**Indicate number of contact hours:**

<table>
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<tr>
<th>Hours of Lecture or Seminar per week:</th>
<th>Hours of Lab or Studio:</th>
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</table>

**When Offered:** (check all that apply)
- [ ] Fall
- [ ] Summer
- [ ] Spring

**Approval Signatures**

<table>
<thead>
<tr>
<th>Department Approval</th>
<th>Date</th>
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<tr>
<th>College/School Approval</th>
<th>Date</th>
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If this course includes subject matter currently dealt with by any other units, the originating department must circulate this proposal for review by those units and obtain the necessary signatures prior to submission. Failure to do so will delay action on this proposal.

<table>
<thead>
<tr>
<th>Unit Name</th>
<th>Unit Approval Name</th>
<th>Unit Approver's Signature</th>
<th>Date</th>
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**For Graduate Courses Only**

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<tr>
<th>Graduate Council Member</th>
<th>Provost's Office</th>
<th>Graduate Council Approval Date</th>
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Form revised 9/14/2015
Master Syllabus

MBA 739: Advanced Data Mining for Business Analytics
(3 credits)

Prerequisite: B or higher in MBA 738 or equivalent

Qualifying Requirements
Admission to Graduate Certificate in Business Analytics or Admission to M.S. in Data Analytics
and concentration in Business Analytics

Programs:
Graduate Certificate in Business Analytics, M.S. in Data Analytics

Course Description:
This course covers business analytics using advanced data mining methods for the purposes of
developing predictive models and forecasting. The course will develop concept of feature
selection to identify what dimensions to best use for constructing decision making models.
More advanced techniques in data mining such as decision trees, neural networks, and other
classification and prediction methods will be covered. Emphasis on application will include
hands-on experience using commercial enterprise data mining software and real business data.

Core competencies and Learning Objectives:
The students will be able to:
1. select a subset of relevant features for use in model construction
2. use advanced supervised learning techniques such as neural networks
3. use multiple models to obtain better predictive performance
4. use regression-based forecasting and smoothing-based methods
5. apply the analysis techniques to business problems using a commercial enterprise data
   mining software

Core Course Topics:
1. Feature Selection
2. Decision Trees
3. Neural Networks
4. Ensemble Learning techniques
5. Regression-Based Forecasting
6. Smoothing Methods

Representative Text and Learning Materials:
Methods of Student Evaluation:
Homework; Final Exam; Term Project; Class Participation

Honor Code:
Students are obligated to strict adherence to the University honor system and code, as described in the current George Mason University catalog 2009-2010. Assignments submitted as part of this course may be tested for honor code violations using electronic tools and other means. All violations will be notified to the Honor Code Committee for enforcement of academic integrity.

Office of Disability Service Statement:
If you are a student with a disability and you need academic accommodations, please see the instructor and contact the Office of Disability Services (ODS) at 993-2474. All academic accommodations must be arranged through the ODS.

REVISION HISTORY