# ITT Technical Institute

# SD4555T

# Development for Web Analytics

# Applications

# Onsite and Online Course

# SYLLABUS

---

**Credit hours:** 4.5

**Contact/Instructional hours:** 67 (41 Theory Hours, 26 Lab Hours)

**Prerequisite(s) and/or Corequisite(s):**

Prerequisites:SD2670T Social Networking Applications and Technology or equivalent, SD3440T Creating Websites Using ASP.NET or equivalent

**Course Description:**

This course examines technologies and techniques used in applications, such as social networking and media, email and blogs, cloud-based productivity, Web-based advertising, search engines and services. Topics include how to apply applications that effectively interact with applications to perform data analysis and support organizational and business needs.

## COURSE SUMMARY

## COURSE DESCRIPTION

This course examines technologies and techniques used in applications, such as social networking and media, email and blogs, cloud-based productivity, Web-based advertising, search engines and services. Topics include how to apply applications that effectively interact with applications to perform data analysis and support organizational and business needs.

## MAJOR INSTRUCTIONAL AREAS

1. Web Analytics 2.0 and Tools
2. Metrics
3. Practical Solutions
4. Measuring Success
5. Leveraging Qualitative Data
6. Testing and Experimentation
7. Competitive Intelligence Analysis
8. Social, Mobile, and Video Analytics
9. Hidden Web Analytics Traps
10. Principles for Becoming an Analysis Professional

## COURSE LEARNING OBJECTIVES

By the end of this course, you should be able to:

1. Define Web analytics and identify the right tools.
2. Apply metrics for meaningful and relevant Web analytics.
3. Generate effective analytical reporting by applying appropriate methods, such as site search and widget analytics.
4. Apply the art and science of measuring outcomes from websites.
5. Apply qualitative research by using usability studies, remote testing, and surveys.
6. Analyze data through testing and experiments.
7. Define CI and analyze CI data sources, types, and secrets.

8. Apply appropriate strategies for collecting and analyzing data from social media, mobile, and video sources.
9. Apply strategies for identifying and avoiding analytics traps.
10. Comply with principles of professional analytics.

## COURSE OUTLINE

### MODULE 1: BASICS OF WEB ANALYTICS

### COURSE LEARNING OBJECTIVES COVERED

- Define Web analytics and identify the right tools.
- Apply metrics for meaningful and relevant Web analytics.
- Generate effective analytical reporting by applying appropriate methods, such as site search and widget analytics.

### TOPICS COVERED

- Introduction to Web Analytics
- Use of Metrics
- Analytical Reporting

| MODULE LEARNING ACTIVITIES | GRADED | OUT-OF-CLASS TIME |
|---|---|---|
| **Reading:** Miller, Chapter 1 and Appendix A. | No | 2 hrs |
| **Reading:** ITT Tech Virtual Library> Basic Search> Beasley, M. (2013). *Practical Web analytics for user experience: How analytics can help you understand your users.* Waltham, MA: Elsevier Inc.> Part 1: Introduction to Web Analytics. | No | 3.5 hrs |
| **Lesson:** Study the lesson for this module. | No | 1.5 hrs |
| **Discussion:** Participate in the discussion titled "Importance of Analytics." | Yes | N/A |
| **Lab:** Complete the lab titled "Creating an HTTP Service." | Yes | N/A |
| **Project:** Read and begin the project. | No | 1.5 hrs |

Total Out-Of-Class Activities: 8.5 Hours

## MODULE 2: METHODS OF WEB ANALYTICS

### COURSE LEARNING OBJECTIVES COVERED

- Define Web analytics and identify the right tools.
- Apply metrics for meaningful and relevant Web analytics.
- Generate effective analytical reporting by applying appropriate methods, such as site search and widget analytics.
- Apply qualitative research by using usability studies, remote testing, and surveys.

### TOPICS COVERED

- Tools of Web Analytics
- Methods of Analytical Reporting
- Data Research Methods

| MODULE LEARNING ACTIVITIES | GRADED | OUT-OF-CLASS TIME |
|---|---|---|
| **Reading:** Miller, Chapter 2. | No | 1.5 hrs |
| **Reading:** ITT Tech Virtual Library> Basic Search> Clifton, B. (2012). *Advanced Web metrics with Google analytics* (3rd ed.). Indianapolis, IN: Wiley Publishing.> Part I: Measuring Success. | No | 5.5 hrs |
| **Lesson:** Study the lesson for this module. | No | 2 hrs |
| **Discussion:** Participate in the discussion titled "Analytics Tools." | Yes | 1 hr |
| **Analysis:** Submit the analysis titled "Quantitative Versus Qualitative Data Study." | Yes | 2 hrs |
| **Lab 1:** Complete the lab titled "Creating an Analytics Service Object." | Yes | N/A |
| **Lab 2:** Complete the lab titled "Handling API Responses." | Yes | N/A |
| **Project:** Continue work on Project Part 1. | No | 5 hrs |

Total Out-Of-Class Activities: 17 Hours

## MODULE 3: DATA ANALYSIS BY TESTING

## COURSE LEARNING OBJECTIVES COVERED

- Apply metrics for meaningful and relevant Web analytics.

- Apply the art and science of measuring outcomes from websites.

- Analyze data through testing and experiments.

- Comply with principles of professional analytics.

## TOPICS COVERED

- Scraping Data from Websites

- Selection of Metrics

- Data Analysis

| MODULE LEARNING ACTIVITIES | GRADED | OUT-OF-CLASS TIME |
|---|---|---|
| **Reading:** Miller, Chapters 3 and 4. | No | 3 hrs |
| **Reading:** ITT Tech Virtual Library> Basic Search> Kugel, C. (2015). The metrics map. *Marketing Insights, 27(1), 30-34.* | No | 1 hr |
| **Lesson:** Study the lesson for this module. | No | 2.5 hrs |
| **Analysis:** Submit the analysis titled "Metrics for Analytics." | Yes | 3 hrs |
| **Lab 1:** Complete the lab titled "Managing API by Using Python." | Yes | N/A |
| **Lab 2:** Complete the lab titled "Extracting and Scraping Website Data Using Python." | Yes | N/A |
| **Project:** Submit Project Part 1. | Yes | 5 hrs |

Total Out-Of-Class Activities: 14.5 Hours

## MODULE 4: DATA COLLECTION AND CI

## COURSE LEARNING OBJECTIVES COVERED

- Apply the art and science of measuring outcomes from websites.
- Define CI and analyze CI data sources, types, and secrets.
- Apply appropriate strategies for collecting and analyzing data from social media, mobile, and video sources.

## TOPICS COVERED

- Competitive Intelligence
- Strategies for Collecting Data
- Strategies for Analyzing Data

| MODULE LEARNING ACTIVITIES | GRADED | OUT-OF-CLASS TIME |
|---|---|---|
| **Reading:** Miller, Chapters 5 and 6. | No | 3 hrs |
| **Reading:** ITT Tech Virtual Library> Basic Search> Chen, H., Chiang, R. L., & Storey, V. C. (2012). Business intelligence and analytics: from big data to big impact. *MIS Quarterly, 36(4), 1165-1188.* | No | 2.5 hrs |
| **Lesson:** Study the lesson for this module. | No | 2 hrs |
| **Discussion:** Participate in the discussion titled "Competitive Intelligence." | Yes | 1 hr |
| **Analysis:** Submit the analysis titled "Data Collection Methods." | Yes | 2 hrs |
| **Lab 1:** Complete the lab titled "Employing Crawling Code." | Yes | N/A |
| **Lab 2:** Complete the lab titled "Using Analytics to Identify Core Groups and Power Structures." | Yes | N/A |
| **Project:** Continue work on Project Part 2. | No | 4 hrs |

Total Out-Of-Class Activities: 14.5 Hours

## MODULE 5: AVOIDING ANALYTICS TRAPS

### COURSE LEARNING OBJECTIVES COVERED

- Apply qualitative research by using usability studies, remote testing, and surveys.

- Analyze data through testing and experiments.

- Apply appropriate strategies for collecting and analyzing data from social media, mobile, and video sources.

- Apply strategies for identifying and avoiding analytics traps.

- Comply with principles of professional analytics.

### TOPICS COVERED

- Analytics Traps

- Measures to Avoid Analytics Traps

- Principles of Professional Analytics

| MODULE LEARNING ACTIVITIES | GRADED | OUT-OF-CLASS TIME |
|---|---|---|
| **Reading:** Miller, Chapters 8 and 9. | No | 3 hrs |
| **Reading:** ITT Tech Virtual Library> Basic Search> Provost, F., & Fawcett, T. (2013). *Data science for business: What you need to know about data mining and data-analytic thinking*. Beijing: O'Reilly Media.> Chapter 2: Business Problems and Data Science Solutions. | No | 4.5 hrs |
| **Analysis:** Submit the analysis titled "Analytics Traps." | Yes | 2 hrs |
| **Lab 1:** Complete the lab titled "Sentiment Analysis." | Yes | N/A |
| **Lab 2:** Complete the lab titled "Theme Analysis." | Yes | N/A |
| **Project:** Submit Project Part 2. | Yes | 5 hrs |

Total Out-Of-Class Activities: 14.5 Hours

## MODULE 6: APPLICATIONS OF WEB ANALYTICS

### COURSE LEARNING OBJECTIVES COVERED

- Define Web analytics and identify the right tools.

- Apply metrics for meaningful and relevant Web analytics.

- Generate effective analytical reporting by applying appropriate methods, such as site search and widget analytics.

- Apply the art and science of measuring outcomes from websites.

- Apply qualitative research by using usability studies, remote testing, and surveys.

- Analyze data through testing and experiments.

- Define CI and analyze CI data sources, types, and secrets.

- Apply appropriate strategies for collecting and analyzing data from social media, mobile, and video sources.

- Apply strategies for identifying and avoiding analytics traps.

- Comply with principles of professional analytics.

| MODULE LEARNING ACTIVITIES | GRADED | OUT-OF-CLASS TIME |
|---|---|---|
| **Lesson:** Study the lesson for this module. | No | 1 hr |
| **Final Exam:** Prepare for the final exam. | No | 5 hrs |
| **Project:** Submit Project Part 3. | Yes | 4 hrs |
| **Final Exam:** Take the final exam. | Yes | N/A |

Total Out-Of-Class Activities: 10 Hours

## EVALUATION AND GRADING

### EVALUATION CRITERIA

The graded assignments will be evaluated using the following weighted categories:

| CATEGORY | WEIGHT |
|---|---|
| Discussion | 10% |
| Lab | 20% |
| Project | 30% |
| Analysis | 20% |
| Final Exam | 20% |
| TOTAL | 100% |

### GRADE CONVERSION

The final grades will be calculated from the percentages earned in the course, as follows:

| GRADE | | PERCENTAGE |
|---|---|---|
| A | (4.0) | 90–100% |
| B+ | (3.5) | 85–89% |
| B | (3.0) | 80–84% |
| C+ | (2.5) | 75–79% |
| C | (2.0) | 70–74% |
| D+ | (1.5) | 65–69% |
| D | (1.0) | 60–64% |
| F | (0.0) | <60% |

## LEARNING MATERIALS AND   REFERENCES

### REQUIRED RESOURCES

#### COMPLETE TEXTBOOK PACKAGE

- Miller, T. (2015). *Web and network data science: Modeling techniques in predictive analytics (Custom ed.). Boston, MA: Pearson Custom.*

#### OTHER ITEMS

- Virtual Machine
- Microsoft Office
- Microsoft Visio
- Python 2.X
- ASP.NET MVC 4
- Visual Studio 2013 Community Edition*

* This software title is available for download from ITT Technical Institute's DreamSpark software download site. For more information, please review the [DreamSpark Implementation Guide](), available at the ITT Technical Institute Student Portal> Resources> Download Center.

### RECOMMENDED RESOURCES

- Professional Associations
  - Digital Analytics Association ([http://www.digitalanalyticsassociation.org/](http://www.digitalanalyticsassociation.org/))
  - KDD ([http://www.kdd.org](http://www.kdd.org))
- ITT Tech Virtual Library (accessed via Student Portal | [https://studentportal.itt-tech.edu](https://studentportal.itt-tech.edu))
  - Basic Search>
    - Beasley, M. (2013). *Practical Web analytics for user experience: How analytics can help you understand your users.* Waltham, MA: Elsevier Inc.
    - Byrne, T. (2007). Mashing up Web analytics and Web content management. *Econtent, 30(8), 32.*
    - Chen, H., Chiang, R. L., & Storey, V. C. (2012). Business intelligence and analytics: from big data to big impact. *MIS Quarterly, 36(4), 1165-1188.*
    - Clifton, B. (2008). *Advanced Web metrics with Google analytics* (3rd ed.). Indianapolis, IN: Wiley Publishing.

- Gašević, D., Dawson, S., & Siemens, G. (2015). Let's not forget: Learning analytics are about learning. *Techtrends: Linking Research & Practice to Improve Learning, 59(1), 64-71.*
- Kugel, C. (2015). The metrics map. *Marketing Insights, 27(1), 30-34.*
- Provost, F., & Fawcett, T. (2013). *Data science for business: What you need to know about data mining and data-analytic thinking.* Beijing: O'Reilly Media.
- Weiguo, F., & Gordon, M. D. (2014). The power of social media analytics. *Communications of the ACM, 57(6), 74-81.*

- Other References
  - Apps by Google Analytics Technology Partners provides ready-to-use applications that extend Google Analytics: http://www.google.com/analytics/partners/search/apps
  - ObservePoint Paid Software as a Service (SaaS) vendor. Detects the setting of the GATC cookies plus Adobe Omniture's cookies. Works as a site-scanning and monitoring/alert tool: http://www.observepoint.com/
  - Visual Studio Magazine, Application Analytics: Why Is the Developer Always the Last to Know? A look at how developers can use the integrated application analytics capabilities of Visual Studio 2010 to improve software quality: https://visualstudiomagazine.com/Articles/2011/07/01/pfven_App-Analytics.aspx
  - Web Analytics Solution Profiler (WASP) A Firefox plug-in that detects the setting of the GATC cookies plus 100 other vendor tools. Works on a page-by-page (free) and site-scanning (paid) basis: http://webanalyticssolutionprofiler.com/#axzz3aDx4nh00

   ○

## INSTRUCTIONAL METHODS AND TEACHING STRATEGIES

The curriculum employs a variety of instructional methods that support the course objectives while fostering higher cognitive skills. These methods are designed to encourage and engage you in the learning process in order to maximize learning opportunities. The instructional methods include but are not limited to lectures, collaborative learning options, use of technology, and hands-on activities.

To implement the above-mentioned instructional methods, this course uses several teaching strategies, such as case studies and lessons. Your progress will be regularly assessed through a variety of assessment tools including discussion, lab, project, analysis, and final exam.

## OUT-OF-CLASS WORK

For purposes of defining an academic credit hour for Title IV funding purposes, ITT Technical Institute considers a quarter credit hour to be the equivalent of: (a) at least 10 clock hours of classroom activities and at least 20 clock hours of outside preparation; (b) at least 20 clock hours of laboratory activities; or (c) at least 30 clock hours of externship, practicum or clinical activities. ITT Technical Institute utilizes a "time-based option" for establishing out-of-class activities which would equate to two hours of out-of-class activities for every one hour of classroom time. The procedure for determining credit hours for Title IV funding purposes is to divide the total number of classroom, laboratory, externship, practicum and clinical hours by the conversion ratios specified above. A clock hour is 50 minutes.

A credit hour is an artificial measurement of the amount of learning that can occur in a program course based on a specified amount of time spent on class activities and student preparation during the program course. In conformity with commonly accepted practice in higher education, ITT Technical Institute has institutionally established and determined that credit hours awarded for coursework in this program course (including out-of-class assignments and learning activities described in the "Course Outline" section of this syllabus) are in accordance with the time-based option for awarding academic credit described in the immediately preceding paragraph.

## ACADEMIC INTEGRITY

All students must comply with the policies that regulate all forms of academic dishonesty or academic misconduct. For more information on the academic honesty policies, refer to the Student Handbook and the School Catalog.

## INSTRUCTOR DETAILS

| | |
|---|---|
| Instructor Name | |
| Office Hours | |
| Contact Details | |

*(End of Syllabus)*