

**COURSE OUTLINE: BM2508 Modern Technologies in Marketing**

|                           |                                  |                 |   |
|---------------------------|----------------------------------|-----------------|---|
| <b>Academic Year</b>      | AY2022-23                        | <b>Semester</b> | 2 |
| <b>Course Coordinator</b> | Assistant Professor Chen Yupeng  |                 |   |
| <b>Course Code</b>        | BM2508                           |                 |   |
| <b>Course Title</b>       | Modern Technologies in Marketing |                 |   |
| <b>Pre-requisites</b>     | None                             |                 |   |
| <b>No of AUs</b>          | 4                                |                 |   |
| <b>Contact Hours</b>      | 3hrs x 13 weeks = 39hrs          |                 |   |
|                           |                                  |                 |   |

**A) Course Aims**

Technology has been the key driver behind current marketing practices. This course is designed to introduce you to modern technologies that have found successful marketing applications (e.g., text mining, deep learning, recommendation systems), and emerging technologies that hold great promise for transforming marketing practices (e.g., neuro-marketing, chatbots, internet of things). It aims to help you develop an intuitive understanding of the fundamental logic of the surveyed technologies, and gain knowledge about how these technologies can be used to improve marketing practices. This course is suitable for second- and third-year marketing students, and business students from other specializations who are interested in the applications of technologies in marketing. By the end of the course, you will be equipped with a conceptual framework and domain knowledge for analyzing how technologies are transforming marketing practices and identifying areas in which current practices can be improved by modern and emerging technologies. These skills are valuable for a career in marketing management, marketing analytics, and marketing research.

**B) Intended Learning Outcomes (ILO)/Objectives**

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

1. Articulate the rationales behind and the key mechanisms of the technologies discussed in the course.
2. Explain how the technologies can be used to enable and improve marketing practices.
3. Identify areas in which marketing practices can be made more effective by appropriate applications of modern and emerging technologies.

**C) Course Content**

This course will cover the following topics: A/B testing, text mining for review analysis, deep learning for image analysis, eye-tracking, neuro-marketing, blockchain, personalized marketing, recommendation system, chatbot, and internet of things.

**D) Assessment (includes both continuous and summative assessment)**

| <b>Component</b> | <b>ILO Tested</b>      | <b>NBS Learning Goal<br/>(Refer to Annex E<br/>for list)</b> | <b>Weighting</b> | <b>Team/<br/>Individual</b> | <b>Assessment Rubrics<br/><br/>(Please insert<br/>rubrics as Appendix)</b> |
|------------------|------------------------|--|------------------|-----------------------------|--|
| 1. Participation | ILO1,<br>ILO2,<br>ILO3 | Class Participation  | 10%              | Individual                  | Class Participation Rubric   |
| 2. Case          | ILO1,<br>ILO2          | Critical Thinking  | 20%              | Team                        | Critical Thinking Rubric   |

|   |                  |                                   |      |            |  |
|---|------------------|-----------------------------------|------|------------|--|
| Presentation (Not all members are required to present)                |                  |                                   |      |            |  |
| 3. Group Project – Written Report                                     | ILO3             | Problem Solving & Decision Making | 25%  | Team       | Problem Solving and Decision Making Rubric |
| 4. Group Project – Presentation (All members are required to present) | ILO3             | Oral Communication                | 10%  | Individual | Oral Presentation Rubric                   |
| 5. Quiz   | ILO1, ILO2, ILO3 | Problem Solving & Decision Making | 35%  | Individual | N/A  |
| Total   |                  |                                   | 100% |            |  |

As the case presentations and the written report for the group project are based on team effort, all members of your team will get the same score for these assignments. Toward the end of the course, a peer evaluation will be conducted. See Annex A for the peer evaluation form and the relevant rubric. If a team member scores an **overall average rating of 3 or below (i.e., the mean of the average ratings from all other team members)**, the instructor will engage directly with all the team members about the issue(s) at hand. If the instructor deems that a team member has not contributed sufficiently after looking into the matter, a penalty will be dealt to the offending team member. This process is meant to ensure that no student is unfairly accused of not contributing to the team projects without clear supporting evidence.

**E) Formative feedback**

You will receive verbal feedback from the instructor about your presentations and written feedback from the instructor about your written report for the group project. Through in-class quiz, you will be able to check your level of understanding along the way.

**F) Learning and Teaching approach**

| Approach      | How does this approach support you in achieving the learning outcomes?  |
|---------------|---|
| Seminars      | Seminars allow the instructor to convey the concepts clearly to the entire class. They also allow you to think critically and share your ideas with peers in class. |
| Cases         | Cases require you to apply concepts learned in class to analyze various marketing practices.  |
| Group Project | The group project allows you to apply concepts learned in class to develop plans for improving the current marketing practices.                                     |
| Quiz          | The quiz tests your understanding of the concepts taught in class and your ability to apply these concepts to solve problems facing marketing practitioners.        |

**G) Reading and References**

There is no textbook for this course. The course slides are complemented by the following reading list:

Anderson, Eric, Duncan Simester. 2011. "A Step-by-Step Guide to Smart Business Experiments". *Harvard Business Review*.

Bonner, Anne. 2019. "The Complete Beginners Guide to Deep Learning". <https://towardsdatascience.com/intro-to-deep-learning-c025efd92535>

Cha, Bonnie. 2015. "A Beginner's Guide to Understanding the Internet of Things". <https://www.vox.com/2015/1/15/11557782/a-beginners-guide-to-understanding-the-internet-of-things>

Chua, Roger. 2019. "A Simple Way to Explain the Recommendation Engine in AI". <https://medium.com/voice-tech-podcast/a-simple-way-to-explain-the-recommendation-engine-in-ai-d1a609f59d97>

Farnsworth, Bryn. 2018. "Eye Tracking: The Complete Pocket Guide". <https://imotions.com/blog/eye-tracking/>

Harrell, Eben. 2019. "Neuromarketing: What You Need to Know". *Harvard Business Review*.

Kannan, P.V., Josh Bernoff. 2019. "Does Your Company Really Need a Chatbot?". *Harvard Business Review*.

Matz, Sandra, Michal Kosinski, Gideon Nave, David Stillwell. 2017. "Psychological Targeting as an Effective Approach to Digital Mass Persuasion". *Proceedings of the National Academy of Sciences*, 114(48), 12714-12719.

MonkeyLearn. 2020. "Text Mining: The Beginner's Guide". <https://monkeylearn.com/text-mining/>

Rosic, Ameer. 2020. "What is Blockchain Technology? A Step-by-Step Guide for Beginners". [https://blockgeeks.com/guides/what-is-blockchain-technology/#A\\_blockchain\\_carries\\_no\\_transaction\\_cost](https://blockgeeks.com/guides/what-is-blockchain-technology/#A_blockchain_carries_no_transaction_cost)

**H) Course Policies and Student Responsibilities****(1) General**

You are expected to complete all assigned pre-class readings and activities, attend all seminars punctually and take all scheduled assignments and tests by due dates. You are expected to take responsibility to follow up with course notes, assignments and course related announcements for seminars you have missed. You are expected to participate in all class discussions and activities.

**(2) Absenteeism**

Absence from class without a valid reason will affect your overall course grade. Valid reasons include falling sick supported by a medical certificate and participation in NTU's approved activities supported by an excuse letter from the relevant bodies. If you miss a seminar, you must inform the course instructor via email prior to the start of the class. It is your responsibility to make up the materials that are missed.

**I) Academic Integrity**

Good academic work depends on honesty and ethical behavior. The quality of your work as a student relies on adhering to the principles of academic integrity and to the NTU Honor Code, a set of values shared by the whole university community. Truth, Trust and Justice are at the core of NTU's shared values.

As a student, it is important that you recognize your responsibilities in understanding and applying the principles of academic integrity in all the work you do at NTU. Not knowing what is involved in maintaining academic integrity does not excuse academic dishonesty. You need to actively equip yourself with strategies to avoid all forms of academic dishonesty, including plagiarism, academic fraud, collusion and cheating. If you are uncertain of the definitions of any of these terms, you should go to the [academic integrity website](#) for more information. Consult your instructor(s) if you need any clarification about the requirements of academic integrity in the course.

#### J) Course Instructors

| Instructor  | Office Location | Phone    | Email             | Consultation Hours |
|-------------|-----------------|----------|-------------------|--------------------|
| Yupeng Chen | S3-B1C-90       | 65141038 | ypchen@ntu.edu.sg | By appointment     |

#### K) Planned Weekly Schedule

| Week   | Topic                            | ILO         | Readings/ Activities         |
|--|----------------------------------|-------------|------------------------------|
| 1  | Introduction                     | ILO 1       | N/A                          |
| New Approaches to Generating Consumer Insights |                                  |             |                              |
| 2  | A/B Testing                      | ILO 1, 2, 3 | Anderson and Simester (2011) |
| 3  | Text Mining for Review Analysis  | ILO 1, 2, 3 | MonkeyLearn (2020)           |
| 4  | Deep Learning for Image Analysis | ILO 1, 2, 3 | Bonner (2019)                |
| 5  | Eye-Tracking                     | ILO 1, 2, 3 | Farnsworth (2018)            |
| 6  | Neuro-Marketing                  | ILO 1, 2, 3 | Harrell (2019)               |
| New Approaches to Interacting with Consumers   |                                  |             |                              |
| 7  | Personalization and Targeting    | ILO 1, 2, 3 | Matz et al. (2017)           |
| 8  | Recommendation System            | ILO 1, 2, 3 | Chua (2019)                  |
| 9  | Chatbot                          | ILO 1, 2, 3 | Kannan and Bernoff (2019)    |
| 10   | Internet of Things               | ILO 1, 2, 3 | Cha (2015)                   |
| 11   | E-Learning: Blockchain           | ILO 1, 2, 3 | Rosic (2020)                 |
| Presentation and Quiz                          |                                  |             |                              |
| 12   | Group Project Presentation       | ILO 3       | N/A                          |
| 13   | Quiz                             | ILO 1, 2, 3 | N/A                          |

**ANNEX A: ASSESSMENT CRITERIA FOR CLASS PARTICIPATION RUBRIC**

| Traits                        | Performance   |  |   |
|-------------------------------|---|--|---|
|                               | 1-2   | 3  | 4-5   |
| <b>Contribution frequency</b> | Does not speak up/contribute in class                         | Occasionally speaks up/contributes in class  | Frequently speaks up/contributes in class   |
| <b>Contribution quality</b>   | Contributions lack substance and are not clearly communicated | Contributions demonstrate knowledge of subject matter and are clearly communicated | Contributions are constructive and insightful and are communicated in a clear and convincing manner |

**ANNEX A: ASSESSMENT CRITERIA FOR CRITICAL THINKING RUBRIC**

| Traits  | Performance  |   |
|---|--|---|
| Applies technologies to solve marketing problems        | <b>Not Yet</b><br>Fails to develop an adequate plan to apply technologies to solve marketing problems  | <b>Substantially Developed</b><br>Develops an adequate plan to apply technologies to solve marketing problems   |
|   | Evaluation: Not Yet <u>  1  </u> <u>  2  </u> <u>  3  </u> <u>  4  </u> <u>  5  </u> <u>  6  </u> <u>  7  </u> <u>  8  </u> <u>  9  </u> <u> 10 </u> Substantially Developed |   |
| Explains the rationale behind their solution approaches | <b>Not Yet</b><br>Does not clearly explain how and why their solution approaches work  | <b>Substantially Developed</b><br>Provides a thorough explanation on how and why their solution approaches work |
|   | Evaluation: Not Yet <u>  1  </u> <u>  2  </u> <u>  3  </u> <u>  4  </u> <u>  5  </u> <u>  6  </u> <u>  7  </u> <u>  8  </u> <u>  9  </u> <u> 10 </u> Substantially Developed |   |

**ANNEX A: ASSESSMENT CRITERIA FOR PROBLEM SOLVING AND DECISION MAKING (TEAM) RUBRIC**

| Traits                                 | Performance  |  |
|--|--|--|
| <b>Identify the Problem (25%)</b>      | <b>Not Yet</b><br>Fails to identify a relevant marketing problem; does not clearly define the problem and explain why solving this problem is important for the focal firm   | <b>Substantially Developed</b><br>Identifies a relevant marketing problem; clearly defines the problem and explains why solving this problem is important for the focal firm   |
|  | Evaluation: Not Yet <u>1</u> 2 3 4 5 6 7 8 9 <u>10</u> Substantially Developed   |  |
| <b>Identify the Technologies (15%)</b> | <b>Not Yet</b><br>Fails to identify a technology or a combination of two technologies for solving the proposed problem; does not clearly explain why these technologies are suitable for solving the problem       | <b>Substantially Developed</b><br>Identifies a technology or a combination of two technologies for solving the proposed problem; clearly explains why these technologies are suitable for solving the problem        |
|  | Evaluation: Not Yet <u>1</u> 2 3 4 5 6 7 8 9 <u>10</u> Substantially Developed   |  |
| <b>Solve the Problem (50%)</b>         | <b>Not Yet</b><br>Fails to develop a thorough plan for applying the technologies to solve the problem; does not clearly explain the implementation details of the plan and discuss how the plan solves the problem | <b>Substantially Developed</b><br>Develops a thorough plan for applying the technologies to solve the problem; clearly explains the implementation details of the plan and discusses how the plan solves the problem |
|  | Evaluation: Not Yet <u>1</u> 2 3 4 5 6 7 8 9 <u>10</u> Substantially Developed   |  |
| <b>Discuss the Limitations (10%)</b>   | <b>Not Yet</b><br>Does not carefully discuss the limitations of the proposed solution plan   | <b>Substantially Developed</b><br>Carefully discusses the limitations of the proposed solution plan  |
|  | Evaluation: Not Yet <u>1</u> 2 3 4 5 6 7 8 9 <u>10</u> Substantially Developed   |  |

**ANNEX A: ASSESSMENT CRITERIA FOR ORAL PRESENTATION (INDIVIDUAL) RUBRIC**

| Traits                                | Performance   |   |
|---------------------------------------|---|---|
| Has a clear message for the audience  | <b>Not Yet</b><br>Central message is not explicitly stated in the presentation. Main points are not clearly identified. | <b>Substantially Developed</b><br>Central message is precisely stated. Main points are clearly identified.  |
|                                       | <b>Evaluation: Not Yet 1 2 3 4 5 6 7 8 9 10 Substantially Developed</b>   |   |
| Connects the topic to the audience    | <b>Not Yet</b><br>Topic is irrelevant to audience interest. No attempt is made to connect topic to the audience.        | <b>Substantially Developed</b><br>Topic is highly relevant to audience interest. Shows a clear understanding of how to deliver the content to the audience. |
|                                       | <b>Evaluation: Not Yet 1 2 3 4 5 6 7 8 9 10 Substantially Developed</b>   |   |
| Addresses questions from the audience | <b>Not Yet</b><br>Fails to provide a clear answer to the audience's questions.  | <b>Substantially Developed</b><br>Clearly answers the audience's questions.   |
|                                       | <b>Evaluation: Not Yet 1 2 3 4 5 6 7 8 9 10 Substantially Developed</b>   |   |



**ANNEX A: ASSESSMENT CRITERIA FOR TEAMWORK & INTERPERSONAL SKILLS (PEER EVALUATION) RUBRIC**

| Traits  | Performance  |  |
|---|--|--|
| <p><b><u>Roles and Responsibility (RR)</u></b><br/>Behaves professionally by upholding responsibility and assuming accountability for self and others in progressing towards the team's goal.</p> | <p><b>Scant</b><br/>Unclear about his/her own role; refuses to take a role in the group; insists to work individually and has limited coordination or communication with others.</p> | <p><b>Substantially Developed</b><br/>Always fulfills responsibilities; performs his/her role within the group with enthusiasm and demonstrates willingness to work collaboratively.</p> |
|   | <p><b>Evaluation: Scant</b> <u>1</u> <u>2</u> <u>3</u> <u>4</u> <u>5</u> <u>6</u> <u>7</u> <b>Substantially Developed</b></p>  |  |
| <p><b><u>Communication (CM)</u></b><br/>Identifies appropriate mechanisms to coordinate and correspond with team members.</p>   | <p><b>Scant</b><br/>Modes of communication are not appropriate, causing confusion and miscommunication among team members.</p>   | <p><b>Substantially Developed</b><br/>Modes of communication are appropriate, and maintain timely communication and correspondence with team members.</p>                                |
|   | <p><b>Evaluation: Scant</b> <u>1</u> <u>2</u> <u>3</u> <u>4</u> <u>5</u> <u>6</u> <u>7</u> <b>Substantially Developed</b></p>  |  |
| <p><b><u>Conflict Resolution (CR)</u></b><br/>Resolves conflicts using a variety of approaches.</p>   | <p><b>Scant</b><br/>Does not recognize conflicts or is unwilling to resolve conflicts.</p>   | <p><b>Substantially Developed</b><br/>Consistently resolves conflicts through facilitating open discussion and compromise.</p>   |
|   | <p><b>Evaluation: Scant</b> <u>1</u> <u>2</u> <u>3</u> <u>4</u> <u>5</u> <u>6</u> <u>7</u> <b>Substantially Developed</b></p>  |  |
| <p><b><u>Contributions (CT)</u></b><br/>Contributes positive input for the team; effectively utilizes one's knowledge and expertise.</p>  | <p><b>Scant</b><br/>Largely disinterested in working in a group and refuses to participate; observes passively or is unwilling to share information with other team members.</p>     | <p><b>Substantially Developed</b><br/>Actively attends and participates in all activities and provides meaningful contribution in articulating ideas and opinions.</p>                   |
|   | <p><b>Evaluation: Scant</b> <u>1</u> <u>2</u> <u>3</u> <u>4</u> <u>5</u> <u>6</u> <u>7</u> <b>Substantially Developed</b></p>  |  |
| <p><b><u>Relationship (RS)</u></b><br/>Maintains cooperative interaction with other team members regardless of individual /cultural differences and respects diverse perspectives.</p>            | <p><b>Scant</b><br/>Rarely listens to others and does not acknowledge the opinions that differ from his/her own.</p>   | <p><b>Substantially Developed</b><br/>Engages in respectful relationships with all other members in the team. Embraces and accepts diverse points of view without prejudice.</p>         |
|   | <p><b>Evaluation: Scant</b> <u>1</u> <u>2</u> <u>3</u> <u>4</u> <u>5</u> <u>6</u> <u>7</u> <b>Substantially Developed</b></p>  |  |

**ANNEX B: NOTES AND SAMPLES****CONFIDENTIAL PEER EVALUATION FORM FOR TEAM PROJECT**

Member's name: \_\_\_\_\_

Seminar group and team number: \_\_\_\_\_

Please use the attached Peer Evaluation Rubric on the next page to evaluate yourself and your team members on each of the 5 stated attributes (on a scale of 1 to 7). State your ratings for yourself and each of your team members in the table below. For your self-assessment, insert "(Self)" after your name in the table below.

| Index # | Name of team members | RR | CM | CR | CT | RS | Average Rating |
|---------|----------------------|----|----|----|----|----|----------------|
| 1       |                      |    |    |    |    |    |                |
| 2       |                      |    |    |    |    |    |                |
| 3       |                      |    |    |    |    |    |                |
| 4       |                      |    |    |    |    |    |                |
| 5       |                      |    |    |    |    |    |                |
| 6       |                      |    |    |    |    |    |                |

If any of your ratings above is **< 4**, please provide a brief explanation to justify the ratings.

| Index # | Brief explanation to justify a rating of < 4 |
|---------|--|
|         |  |
|         |  |
|         |  |
|         |  |
|         |  |
|         |  |

*You may attach supporting documents (like emails and screen shots), if any, to support your explanations above.*