Visvesvaraya Technological University

BRMK557

Research Methodology and Intellectual Property Rights

Questions (Indicating RBTL) and Answers

Module 2 Part 1

Mr. Harish M

Syllabus Module 2:

Literature Review and Technical Reading, New and Existing Knowledge, Analysis and Synthesis of Prior Art, Bibliographic Databases, Web of Science, Google and Google Scholar, Effective Search: The Way Forward, Introduction to Technical Reading Conceptualizing Research, Critical and Creative Reading, Taking Notes While Reading, Reading Mathematics and Algorithms, Reading a Datasheet.

Attributions and Citations: Giving Credit Wherever Due, Citations: Functions and Attributes, Impact of Title and Keywords on Citations, Knowledge Flow through Citation, Citing Datasets, Styles for Citations, Acknowledgments and Attributions, What Should Be Acknowledged, Acknowledgments in Books Dissertations, Dedication or Acknowledgments.

Course Outcomes

At the end of the course the student will be able

to: CO 1: To know the meaning of engineering

research.

CO2: To know the procedure of Literature Review and

Technical Reading.

CO3: To know the fundamentals of patent laws and drafting

procedure.

CO4: Understanding the copyright laws and subject

matters of copyrights and designs

CO 5: Understanding the basic principles of design rights.

1. Literature Review
   Technical Reading and New and Existing Knowledge
2. Analysis and
   Synthesis of Prior Art

Describe the importance of performing a thorough literature review in engineering research, while also illustrating how a proficiently executed literature review aids in showcasing originality in research.

CO2, RBTL 2, 10 Marks.

Answer Key:

Understanding the Purpose of Literature Review and Its Research Role

Navigating Sources of Existing Knowledge

Effective Strategies for Conducting a Comprehensive Literature Review

Analyzing and Synthesizing Prior Research: Researchers' Process Evaluating Information Sources for Research Validity

Understanding the Role of Literature Review and Its Research Purpose

Purpose of Literature

Review: Problem Identification:

Advocating Approaches:

Choice of Methods:

Understanding the Purpose of Literature Review and Its Research Role

Purpose of Literature Review: The main goal of a literature review is to identify and understand existing knowledge.

Problem Identification:

Advocating

Approaches: Choice

of Methods:

Understanding the Purpose of Literature Review and Its Research Role

Purpose of Literature Review:

Problem Identification: It helps in correctly identifying research problems that might be unclear initially.

Advocating

Approaches: Choice

of Methods:

Understanding the Purpose of Literature Review and Its Research Role

Purpose of Literature Review:

Problem Identification:

Advocating Approaches: Researchers use literature to advocate approaches to understanding specific problems.

Choice of Methods:

Understanding the Purpose of Literature Review and Its Research Role

Purpose of Literature Review:

Problem Identification:

Advocating Approaches:

Choice of Methods: It assists in comprehending the choice of research methods.

Navigating Sources of Existing Knowledge

Textbooks vs. Research Papers: Complexity of Research Papers: Building a Strong Foundation:

Navigating Sources of Existing Knowledge

Textbooks vs. Research Papers: Textbooks provide established knowledge, while research papers offer recent developments.

Complexity of Research Papers: Building a Strong Foundation:

Navigating Sources of Existing Knowledge

Textbooks vs. Research Papers:

Complexity of Research Papers: Research papers are more specialized and assume prior knowledge in the field.

Building a Strong Foundation:

Navigating Sources of Existing Knowledge

Textbooks vs. Research Papers: Complexity of Research Papers:

Building a Strong Foundation: Reading and learning from various sources help in constructing a solid foundation for research.

Effective Strategies for Conducting a Comprehensive Literature Review

Conceptual Focus:

Expectations of

Supervisors: Rules for

Effective Review:

Comprehensive Approach:

Effective Strategies for Conducting a Comprehensive Literature Review

Conceptual Focus: A literature review should focus on concepts rather than just listing authors.

Expectations of

Supervisors: Rules for

Effective Review:

Comprehensive Approach:

Effective Strategies for Conducting a Comprehensive Literature Review

Conceptual Focus:

Expectations of Supervisors: A well-executed literature review impresses supervisors by showcasing a strong grasp of the field's current state.

Rules for Effective

Review: Comprehensive

Approach:

Effective Strategies for Conducting a Comprehensive Literature Review

Conceptual Focus:

Expectations of Supervisors:

Rules for Effective Review: There are guidelines for writing an effective literature review, including avoiding and synthesizing information effectively.

Comprehensive Approach:

Effective Strategies for Conducting a Comprehensive Literature Review

Conceptual Focus:

Expectations of Supervisors:

Rules for Effective Review:

Comprehensive Approach: A good literature survey involves systematically analyzing and synthesizing archived work.

Analyzing and Synthesizing Prior Research: Researchers' Process

Analyzing and Synthesizing Prior Research: Researchers' Process

After collecting articles for the literature review, researchers break them down and find useful information.

They then put all this information together to see what conclusions they can draw from the articles as a group.

Analyzing and Synthesizing Prior Research: Researchers' Process

Researchers need to:

- Understand the main idea in each article.
- Look at the models and experiments used. Connect the different pieces of information. Compare and contrast what they find.
- Identify strengths and weaknesses.

Analyzing and Synthesizing Prior Research: Researchers' Process

It's important to question big claims in the articles. If you believe everything you read, it can limit your own research and critical thinking.

The goal of a literature review is to discover new things to study, point out problems in existing research, and propose fresh ideas.

Evaluating Information Sources for Research Validity

No matter where you find information, you must evaluate it carefully before using it in your research.

Checking articles published in reputable journals or granted patents is a good idea.

Evaluating Information Sources for Research Validity

Here are some things to consider when evaluating information:

- Who is the author, and where do they work? Does the information seem accurate and backed by other sources?
- Is the source at the right level of complexity for your research?

Research Methodology and Intellectual Property Rights

Questions (Indicating RBTL) and

Answers Module 2 Part 1

Thank You

Visvesvaraya Technological University

BRMK557

Research Methodology and Intellectual Property Rights

Questions (Indicating RBTL) and Answers

Module 2 Part 2

Syllabus Module 2:

Literature Review and Technical Reading, New and Existing Knowledge, Analysis and Synthesis of Prior Art, Bibliographic Databases, Web of Science, Google and Google Scholar, Effective Search: The Way Forward, Introduction to Technical Reading Conceptualizing Research, Critical and Creative Reading, Taking Notes While Reading, Reading Mathematics and Algorithms, Reading a Datasheet.

Attributions and Citations: Giving Credit Wherever Due, Citations: Functions and Attributes, Impact of Title and Keywords on Citations, Knowledge Flow through Citation, Citing Datasets, Styles for Citations, Acknowledgments and Attributions, What Should Be Acknowledged, Acknowledgments in Books Dissertations, Dedication or Acknowledgments.

Course Outcomes

At the end of the course the student will be able

to: CO 1: To know the meaning of engineering

research.

CO2: To know the procedure of Literature Review and

Technical Reading.

CO3: To know the fundamentals of patent laws and drafting

procedure.

CO4: Understanding the copyright laws and subject

matters of copyrights and designs

CO 5: Understanding the basic principles of design rights.

3. Bibliographic Databases
4. Effective Search: The Way Forward

Describe the significance of bibliographic databases like Web of Science and their role in aiding researchers to access scholarly articles efficiently, while highlighting the limitations of search engines like Google Scholar in the academic context.

CO2, RBTL 3, 10 Marks

Answer Key:

Bibliographic Databases Web of Science

Google and Google Scholar

Navigating Scholarly Publications

Effective Information Retrieval: Tools, Strategies, and Ongoing Learning

Bibliographic Databases:

Serve as extensive repositories

Bibliographic Databases:

Vital for accessing academic articles

Web of Science:

Widely acclaimed and frequently used academic database

Web of Science:

Allows targeted searches

Web of Science:

Enables refining search results based on citation frequency

Web of Science:

For rigorous research, databases like Web of Science offer more reliable and focused results

Google and Google Scholar:

Ubiquitous search engines with inherent limitations

Google and Google Scholar:

Scan the entire internet, making it challenging to discern information reliability

Google and Google Scholar:

GoogleScholar may include questionable resources

Google and Google Scholar:

Optimization strategies include using quotes and relevant keywords

Navigating Scholarly Publications:

Crafted by subject-matter experts for expert audiences

Navigating Scholarly Publications:

Rigorously cite all sources

Navigating Scholarly Publications:

Undergo thorough peer-review processes

Effective Information Retrieval:
Tools, Strategies, and Ongoing Learning

Practical knowledge and insights available in accessible formats like magazines

Effective Information Retrieval:
Tools, Strategies, and Ongoing Learning

Utilize various search tools and platforms for a comprehensive information spectrum

Effective Information Retrieval:
Tools, Strategies, and Ongoing Learning

Carefully consider the type and likely sources of information needed

Effective Information Retrieval:
Tools, Strategies, and Ongoing Learning

Iterative search
process

Effective Information Retrieval:
Tools, Strategies, and Ongoing Learning

Reading and
Synthesis

Effective Information Retrieval:
Tools, Strategies, and Ongoing Learning

Process may need repetition for a comprehensive understanding

Effective Information Retrieval:
Tools, Strategies, and Ongoing Learning

Developing Reading Skills
Efficiency in reading complex articles requires practice and refinement

Effective Information Retrieval:
Tools, Strategies, and Ongoing Learning

Developing Reading Skills
Improvement overtime with gained experience

Effective Information Retrieval:
Tools, Strategies, and Ongoing Learning

Active Reading and Consideration

Information retrieval is the initial phase

Effective Information Retrieval:
Tools, Strategies, and Ongoing Learning

Active Reading and Consideration
Invest time in developing personal ideas and insights

Effective Information Retrieval: Tools, Strategies, and Ongoing Learning

Practical knowledge and insights available in accessible formats like magazines

Utilize various search tools and platforms for a comprehensive information spectrum

Carefully consider the type and likely sources of information needed

Iterative search process Reading and Synthesis

Process may need repetition for a comprehensive understanding Developing Reading Skills

Efficiency in reading complex articles requires practice and refinement

Improvement over time with gained experience

Research Methodology and Intellectual Property Rights

Questions (Indicating RBTL) and

Answers Module 2 Part 2

Thank You

Visvesvaraya Technological University

BRMK557

Research Methodology and Intellectual Property Rights

Questions (Indicating RBTL) and Answers

Module 2 Part 3

Mr. Harish M

Syllabus Module 2:

Literature Review and Technical Reading, New and Existing Knowledge, Analysis and Synthesis of Prior Art, Bibliographic Databases, Web of Science, Google and Google Scholar, Effective Search: The Way Forward, Introduction to Technical Reading Conceptualizing Research, Critical and Creative Reading, Taking Notes While Reading, Reading Mathematics and Algorithms, Reading a Datasheet.

Attributions and Citations: Giving Credit Wherever Due, Citations: Functions and Attributes, Impact of Title and Keywords on Citations, Knowledge Flow through Citation, Citing Datasets, Styles for Citations, Acknowledgments and Attributions, What Should Be Acknowledged, Acknowledgments in Books Dissertations, Dedication or Acknowledgments.

Course Outcomes

At the end of the course the student will be able

to: CO 1: To know the meaning of engineering

research.

CO2: To know the procedure of Literature Review and

Technical Reading.

CO3: To know the fundamentals of patent laws and drafting

procedure.

CO4: Understanding the copyright laws and subject

matters of copyrights and designs

CO 5: Understanding the basic principles of design rights.

5. Introduction to Technical Reading
6. Conceptualizing Research
7. Critical and Creative Reading
8. Taking Notes While Reading
9. Reading Mathematics and Algorithms
10. Reading a Datasheet

Explain the essential steps and strategies involved in technical reading for researchers, emphasizing the importance of critically evaluating research papers, creating meaningful research objectives, and effectively taking notes during the reading process.

CO2, RBTL 3, 10 Marks.

Key Answers:

Introduction to Technical Reading Conceptualizing Research Critical and Creative Reading Taking Notes While Reading Reading Mathematics and Algorithms Reading a Datasheet

Introduction to Technical Reading

- It is important to stay updated
- Need to consider quality over quantity
- Need to read engineering research papers
- Need to have a strategic reading approach
- Need to consider the author reputation
- Need continuous search for relevant literature

Conceptualizing Research

- Need of a good research objective
- Need the deep understanding of literature
- Role of Expertise at Ph.D. Level is crucial
- Need to seek guidance for smaller projects

Critical and Creative Reading

- Critical Reading Focus
- Challenges in Creative Reading
- Future Research Directions

Taking Notes While Reading

- Importance of Note-Taking
- Inclusive Notes
- Summarizing Contributions
- Comparative Assessment

Reading Mathematics and Algorithm

- Essentiality of Mathematical Content
- Thorough Reading for Understanding
- Skimming for Familiar Content
- Verification Through Implementation

Reading a Datasheet

- Understanding Electronic Components
- Key Datasheet Sections
- Crucial for Circuit Design

BRMK557

Research Methodology and Intellectual Property Rights

Questions (Indicating RBTL) and

Answers Module 2 Part 3

Thank You

Visvesvaraya Technological University

BRMK557

Research Methodology and Intellectual Property Rights

Questions (Indicating RBTL) and Answers

Module 2 Part 4

Mr. Harish M

Syllabus Module 2:

Literature Review and Technical Reading, New and Existing Knowledge, Analysis and Synthesis of Prior Art, Bibliographic Databases, Web of Science, Google and Google Scholar, Effective Search: The Way Forward, Introduction to Technical Reading Conceptualizing Research, Critical and Creative Reading, Taking Notes While Reading, Reading Mathematics and Algorithms, Reading a Datasheet.

Attributions and Citations: Giving Credit Wherever Due, Citations: Functions and Attributes, Impact of Title and Keywords on Citations, Knowledge Flow through Citation, Citing Datasets, Styles for Citations, Acknowledgments and Attributions, What Should Be Acknowledged, Acknowledgments in Books Dissertations, Dedication or Acknowledgments.

Course Outcomes

At the end of the course the student will be able

to: CO 1: To know the meaning of engineering

research.

CO2: To know the procedure of Literature Review and

Technical Reading.

CO3: To know the fundamentals of patent laws and drafting

procedure.

CO4: Understanding the copyright laws and subject

matters of copyrights and designs

CO 5: Understanding the basic principles of design rights.

11. Attributions and Citations: Giving Credit Wherever Due
12. Citations: Functions and Attributes
13. Impact of Title and Keywords on Citations, Unethical Citations

Explain the importance of citing sources in academic writing and discuss the functions of citation, highlighting the significance of details. Also analyze the benefits of citations, factors influencing citation rates, the role of keywords, and ethical considerations in citations.

CO2, RBTL 3, 10 Marks

Answer Key:

Introduction, Materials Eligible for Citation, Citing Source Twice, LaTeX for Citation Management, Connection between Old and New Research, Functions of Citation, Importance of Details in Citations, Benefits of Citations

Factors Influencing Citation Rate, Role of Keywords, Unethical Citations

Introduction: Giving credit to authors Materials Eligible for Citation Citing Source Twice

LaTeX for Citation Management Connection between Old and New Research

Functions of Certification Function

Verification

Validation

Acknowledgment

Function Documentation

Function

Functions of Certification Function

Verification

Validation

Acknowledgment

Function Documentation

Function

Importance of Details in Citations Benefits of Citations

Factors Influencing Citation Rate

- Significance and Availability Title's Importance
- Title Characteristics
- Title Content and Style Keywords in the Title

Role of Keywords

Essential
Visibility and Citation
Probability

Unethical Citations

Spurious
Citations Biased
Citations
Self-Citations
Coercive
Citations

BRMK557

Research Methodology and Intellectual Property Rights

Questions (Indicating RBTL) and

Answers Module 2 Part 4

Thank You

Visvesvaraya Technological University

BRMK557

Research Methodology and Intellectual Property Rights

Questions (Indicating RBTL) and Answers

Module 2 Part 5

Mr. Harish M

Syllabus Module 2:

Literature Review and Technical Reading, New and Existing Knowledge, Analysis and Synthesis of Prior Art, Bibliographic Databases, Web of Science, Google and Google Scholar, Effective Search: The Way Forward, Introduction to Technical Reading Conceptualizing Research, Critical and Creative Reading, Taking Notes While Reading, Reading Mathematics and Algorithms, Reading a Datasheet.

Attributions and Citations: Giving Credit Wherever Due, Citations: Functions and Attributes, Impact of Title and Keywords on Citations, Knowledge Flow through Citation, Citing Datasets, Styles for Citations, Acknowledgments and Attributions, What Should Be Acknowledged, Acknowledgments in Books Dissertations, Dedication or Acknowledgments.

Course Outcomes

At the end of the course the student will be able

to: CO 1: To know the meaning of engineering

research.

CO2: To know the procedure of Literature Review and

Technical Reading.

CO3: To know the fundamentals of patent laws and drafting

procedure.

CO4: Understanding the copyright laws and subject

matters of copyrights and designs

CO 5: Understanding the basic principles of design rights.

14. Knowledge Flow through Citation
15. Citing Datasets
16. Styles for Citations

How does the process of citing sources contribute to the flow of knowledge in academic research? Additionally, in the context of modern engineering research, how can proper data citations, enhance research integrity by justifying claims, recognizing contributors, addressing ownership, and ensuring accessibility for future reference?

CO2, RBTL 3, 10 Marks

Answer Key:

Knowledge Flow through Citation

The relationship between citations, knowledge flow, and various elements in the academic landscape

Therelationship between co-authorship and different types of citations in research publications

Citing Datasets

Styles for Citations

Knowledge Flow through Citation

Transmission of Knowledge in Research: Exploring the Channels of Verbal Communication, Books, Documents, Video, Audio, and Images in Engineering Research.

Importance of Citing Sources: Linking Prior Work to Innovation through Citation Networks in the Production of Knowledge.

The relationship between knowledge flow, and various elements in the academic landscape

- Knowledge Transfer
- Recognition and Impact
- Influence of Journals and Conferences
- Institutional Standing

The relationship between co-authorship and different types of citations in research publications:

Collaborative Influence

Author Network

Dynamics Mutual

Citations

Intra-Team Connections

Citing Datasets

Importance of Data Citations

Ownership and Permission

Comprehensive Citations

Examples:

Citing Datasets

Examples:

Name of the Data, Author, Country Name (Month, Year): [Accessed: date, month, year] Retrieved from [URL]

Author (Year). [Personnel survey]. Unpublished raw data.

Styles for Citations ASCE Style

Reference List (Books):

Author Surname, Author Initial. (Year Published). Title. Publisher, City, Pages Used.

Styles for Citations ASCE Style Reference List

(Author / Credentials / Company Name (Year Published). ‘Title’. [Website URL] (Accessed: [Date]).

Website

Styles for Citations ASCE Style

Reference List (Journal Publication)

Author Surname, Author Initial. (Year Published). ‘Title’. Publication Title, Volume number(Issue number), Pages Used.

Styles for Citations ASCE Style

In-text Citation (Journals or Books):

(Author Surname/Website URL, Year Published).

Styles for Citations IEEE Style

Journal Article:

Author Initial(s). Author Surname, "Title of paper," Abbrev. Title of Journal, vol. x, no. x, pp. xxx-xxx, Month, Year

Styles for
Citations IEEE Style
Book Chapter:
Author Initial(s). Author Surname, "Title of chapter," in Title of Book, xth ed., Country: Publisher, Year, ch. x, pp. xxx-xxx

Styles for Citations IEEE Style

Website:

Author Credentials / Company Name. (Year Published). "Title of the Webpage." [Online]. Available: http://WebsiteURL. [Accessed: Month Day, Year].

Styles for Citations ASME Style

Journal Article:

Author Surname, Author Initial. (Year Published). "Title of the Article." Title of the Journal, Volume(Issue), Page Range.

Styles for Citations ASME Style

Book Chapter:

Author Surname, Author Initial. (Year Published). "Title of the Chapter." In Title of the Book, Editor Initial and Surname (Ed.), Publisher, City, Page Range.

BRMK557

Research Methodology and Intellectual Property Rights

Questions (Indicating RBTL) and

Answers Module 2 Part 5

Thank You

Visvesvaraya Technological University

BRMK557

Research Methodology and Intellectual Property Rights

Questions (Indicating RBTL) and Answers

Module 2 Part 6

Mr. Harish M

Syllabus Module 2:

Literature Review and Technical Reading, New and Existing Knowledge, Analysis and Synthesis of Prior Art, Bibliographic Databases, Web of Science, Google and Google Scholar, Effective Search: The Way Forward, Introduction to Technical Reading Conceptualizing Research, Critical and Creative Reading, Taking Notes While Reading, Reading Mathematics and Algorithms, Reading a Datasheet.

Attributions and Citations: Giving Credit Wherever Due, Citations: Functions and Attributes, Impact of Title and Keywords on Citations, Knowledge Flow through Citation, Citing Datasets, Styles for Citations, Acknowledgments and Attributions, What Should Be Acknowledged, Acknowledgments in Books Dissertations, Dedication or Acknowledgments.

Course Outcomes

At the end of the course the student will be able

to: CO 1: To know the meaning of engineering

research.

CO2: To know the procedure of Literature Review and

Technical Reading.

CO3: To know the fundamentals of patent laws and drafting

procedure.

CO4: Understanding the copyright laws and subject

matters of copyrights and designs

CO 5: Understanding the basic principles of design rights.

17. Acknowledgments and Attributions
18. What Should Be Acknowledged?
19. Acknowledgments in Books/Dissertations
20. Dedication or Acknowledgments?

How the inclusion of acknowledgme sections in engineering research publicati ons recognizin contributions ranging , moral and financial supe from tech nical and conceptual assis tance, contribute to the integrity, collaboration, and professional impact evaluation within the academic community?

CO2, RBTL 3, 10 Marks

Answer Key:
Acknowledgments and Attributions What Should Be Acknowledged?
Acknowledgments in Books/Dissertations Dedication and Acknowledgments

How the inclusion of acknowledgme sections in engineering research publicati ons recognizin contributions ranging , moral and financial supe from tech nical and conceptual assis tance, contribute to the integrity, collaboration, and professional impact evaluation within the academic community?

CO2, RBTL 3, 10 Marks

Answer Key:
Acknowledgments and Attributions What Should Be Acknowledged?
Acknowledgments in Books/Dissertations Dedication and Acknowledgments

Acknowledgments and Attributions

Introduction

-expresses gratitude for contributions to the work.

- placed at the end of the text or as a footnote, depending on guidelines.
- recognizes individuals, organizations, or funding bodies for their role in research.

Acknowledgments and Attributions

Categories of Acknowledgment

- moral, financial, editorial, institutional or technical, and conceptual support.
- in engineering research extend to technicians, students, funding agencies, and collaborative contributors.

What Should Be Acknowledged?

Elements:

Quotation, ideas, facts, paraphrasing, funding, oral discussions, laboratory, and computer work.

What Should Be Acknowledged?

Who to Acknowledge:

Persons offering scientificor technical guidance, assistance in discussions, or sharing information. Acknowledge grants received with full details.

What Should Be Acknowledged?

Acknowledging Presentation

Elsewhere:

Citation for abstracts or presentations at scientific meetings, symposiums, etc.

Importance of Acknowledgments:

- demonstrate integrity, encourage collaboration, and play a role in professional impact evaluation.

Acknowledgments in Books/Dissertations:

Books usually include:

main
supervisor,
peers,
academic staff,
technical
support,
colleagues,
family, and
friends.

Dedication and Acknowledgments

Dedication Usage:

Rarely used in journal papers or conference proceedings. Reserved for books, theses, or dissertations.

Dedication vs. Acknowledgments:

Dedication is for expressing a personal dedication to someone.

Acknowledgments recognize contributions from various individuals.

BRMK557

Research Methodology and Intellectual Property Rights

Questions (Indicating RBTL) and

Answers Module 2 Part 6

Thank You