# MODULE HANDBOOK

# INTRODUCTION TO META ANALYSIS

STATISTICS UNDERGRADUATE PROGRAM
DEPARTMENT OF STATISTICS
FACULTY OF SCIENCE AND DATA ANALYTICS
INSTITUT TEKNOLOGI SEPULUH NOPEMBER
SURABAYA

# ENDORSEMENT PAGE

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| | **MODULE HANDBOOK**<br>**INTRODUCTION TO META ANALYSIS**<br>**STATISTICS UNDERGRADUATE PROGRAM**<br>**DEPARTMENT OF STATISTICS**<br>**INSTITUT TEKNOLOGI SEPULUH NOPEMBER** |

| Proses<br>*Process* | Penanggung Jawab<br>*Person in Charge* | | | Tanggal<br>*Date* |
|---|---|---|---|---|
| | Nama<br>*Name* | Jabatan<br>*Position* | Tanda tangan<br>*Signature* | |
| Perumus<br>*Preparation* | Prof. Dr. Bambang Widjanarko Otok, M.Si | Dosen<br>Lecturer | | |
| Pemeriksa dan Pengendalian<br>*Review and Control* | Prof. Dr. Bambang Widjanarko Otok, M.Si.<br>Santi Wulan P, M.Si, Ph.D | Tim kurikulum<br>Curriculum team | | |
| Persetujuan<br>*Approval* | Dr. Bambang Widjanarko Otok, M.Si | Koordinator RMK<br>Course Cluster Coordinator | | |
| Penetapan<br>*Determination* | Dr. Kartika Fithriasari, M.Si | Kepala Departemen<br>Head of Department | | |

# MODULE HANDBOOK
# INTRODUCTION TO META ANALYSIS

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| Module name | INTRODUCTION TO META ANALYSIS | |
| Module level | Undergraduate | |
| Code | SS234757 | |
| Course (if applicable) | INTRODUCTION TO META ANALYSIS | |
| Semester | 7 | |
| Person responsible for the module | Prof. Dr. Bambang Widjanarko Otok, M.Si | |
| Lecturer | Prof. Dr. Bambang Widjanarko Otok, M.Si.<br>Santi Wulan P, M.Si, Ph.D | |
| Language | Bahasa Indonesia and English | |
| Relation to curriculum | Undergradute degree program, elective, 7th semester. | |
| Type of teaching, contact hours | Other SCL Methods (31,25%); Non SCL (68,75%) | |
| Workload | 1. Lectures [L]: 3 x 50 = 150 minutes per week.<br>2. Practicum [P]: 3x 45 = 135 minutes per week.<br>3. Exercises, Assignments [EA]: 3x60 minutes per week.<br>4. Independent Learning [IL]: 3 x 60 minutes per week. | |
| Credit points | 3 credit points (SKS) Equivalent to 4.8 ECTS | |
| Requirements according to the examination regulations | A student must have attended at least 80% of the lectures to sit in the exams. | |
| Mandatory prerequisites | Regression Analysis, Categorical Data Analysis | |
| Learning outcomes and their corresponding PLOs | CLO.1 Able to apply knowledge of statistical, mathematical, and computational theories related to the concept of meta analysis<br>CLO.3 Able to analyze data with appropriate statistical methods and interpret them<br>CLO.4 Able to identify, formulate, and solve statistical problems in various applied fields | PLO-6<br>PLO-7<br>PLO-10 |
| Content | Meta Analysis is one of the expertise courses that is part of the field of study in the Environmental and Health Statistics course family. The purpose of studying Meta Analysis is that students are able to understand the basic concepts and statistical methods for meta analysis, as well as strategies for interpreting the results of meta analysis on a real problem, both in its development and application. Through this course, it is hoped that students will have the learning experience to think critically and be able to give the right decisions about the appropriate metaanalysis method on a problem and its | |

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| | solution. The learning strategies used are discussions and exercises and tasks. |
| Assessment and its weight | Assignment & Test I – 20%<br>Midterm Exam – 30%<br>Assignment & Test II – 20%<br>Final Exam– 30% |
| Media employed | LCD, whiteboard, websites (myITS Classroom), zoom |
| Reading list | 1. Borenstein M, Hedenganes LV, Higgins JPT, and Rothstein HR, 2009. Introduction to Meta-Analysis. John Wiley dan Sons, Ltd.<br>2. Bohning, D., Sasivimol, R., and Ronny, K. 2008. Meta Analysis of Binary Data Using Profile Likelihood. Chapman dan Hall/CRCTaylor dan Francis Group.<br>3. Joachim Hartung, Guido K., and Bimal, K. S. 2008. Statistical Meta Analysis with Applications. John Wiley dan Sons, Inc., Publication<br>4. John, E., Hunter, Frank L. and Schmidt. 2004. Methods of Meta Analysis. Sage Publications, Inc.<br>5. Larry, V., Hedenganes, and Ingram, O. 1985. Statistical Method for Meta Analysis. New York : Orlando San Diego.<br>6. Sterne JAC (editor). 2009. Meta-Analysis in Stata: An updated Collection from the Stata Journal. Stata Press.<br>7. Whitehead, A. 2002. Meta-Analysis of Controlled Clinical Trials. A. Whitehead Copyright. John Wiley dan Sons, Ltd. |

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| | **INSTITUT TEKNOLOGI SEPULUH NOPEMBER**<br>**FAKULTAS SAINS DAN ANALITIKA DATA**<br>**PROGRAM STUDI SARJANA STATISTIKA**<br>**DEPARTEMEN STATISTIKA** | **Kode Dokumen** |

**RENCANA PEMBELAJARAN SEMESTER/**
***SEMESTER LEARNING PLAN***

| **MATA KULIAH (MK)/** *Course* | **KODE/** *Code* | **Rumpun MK/** *Course Group* | **BOBOT (sks)/** *Weight (credit)* | | **SEMESTER/** *Semester* | **Tgl Penyusunan/** *Drafting Date* |
|---|---|---|---|---|---|---|
| **PENGANTAR META ANALISIS /** ***INTRODUCTION TO META ANALYSIS*** | SS234757 | LINGKES | **T=3** | **P=0** | IV | 17 Desember 2022 |

| **OTORISASI/** *AUTHORIZATION* | **Pengembang RPS/** *RPS Developer* | **Koordinator RMK/** *Course Group Coordinator* | **Ketua PRODI/** *Head of Department* |
|---|---|---|---|
| | Prof. Dr. Bambang Widjanarko Otok, M.Si. | Prof. Dr. Bambang Widjanarko Otok, M.Si. | Dr. Kartika Fithriasari, M.Si |

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| **Capaian Pembelajaran (CP)/** *Learning Achievement* | **CPL-PRODI yang dibebankan pada MK/** *PLO* | |
| | CPL-6 | Mampu merancang, melaksanakan, dan mengevaluasi pengumpulan data dengan metodologi yang tepat |
| | CPL-7 | Mampu menggunakan perangkat komputasi modern untuk menyelesaikan permasalahan statistik |
| | CPL-10 | Mampu menerapkan metode statistika Bisnis, Industri, Ekonomi, Sosial, Kesehatan, atau Lingkungan pada permasalahan riil |
| | *PLO-6* | *Able to design, collect, and perform data management with the right methodology* |
| | *PLO-7* | *Able to use modern computing devices to solve statistical problems* |
| | *PLO-10* | *Able to apply business, industrial, economic, social, health or environmental statistical methods to real problems* |
| | **Capaian Pembelajaran Mata Kuliah (CPMK)/** *CLO* | |

<table>
<tr><td></td><td>CPMK.1 Mampu menerapkan pengetahuan teori statistika, matematika, dan komputasi terkait konsep analisis meta<br>CPMK.3 Mampu menganalisis data dengan metode statistika yang tepat dan mengintepretasikannya<br>CPMK.4 Mampu mengindentifikasi,memformulasi, dan menyelesaikan masalah statistika di berbagai bidang terapan<br>CLO.1 Able to apply knowledge of statistical, mathematical, and computational theories related to the concept of meta analysis<br>CLO.3 Able to analyze data with appropriate statistical methods and interpret them<br>CLO.4 Able to identify, formulate, and solve statistical problems in various applied fields</td></tr>
<tr><td></td><td>Matrik CPL – CPMK<br>PLO-CLO Matrix<br><br>
<table>
<tr><td>CPMK</td><td>CPL-1</td><td>…</td><td></td><td></td></tr>
<tr><td>CPMK-1</td><td></td><td>V</td><td>V</td><td></td></tr>
<tr><td>…</td><td>V</td><td></td><td></td><td></td></tr>
<tr><td></td><td>V</td><td>V</td><td></td><td></td></tr>
<tr><td>…</td><td></td><td></td><td></td><td></td></tr>
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</td></tr>
<tr><td>Deskripsi Singkat MK/ Course Description</td><td>Meta Analisis merupakan salah satu mata kuliah keahlian yang merupakan bagian dari bidang kajian dalam rumpun mata kuliah Statistik Lingkungan dan Kesehatan. Tujuan mempelajari Analisis Meta adalah mahasiswa mampu memahami konsep dasar dan metode-metode statistik untuk meta analysis, serta strategi untuk menginterpretasikan hasil meta analysis pada suatu problem riil, baik dalam pengembangan dan penerapannya. Melalui mata kuliah ini diharapkan mahasiswa akan memiliki pengalaman belajar untuk berfikir secara kristis dan mampu memberikan keputusan yang tepat tentang metode meta analysis yang sesuai pada suatu permasalahan dan penyelesaiannya. Strategi pembelajaran yang digunakan adalah diskusi dan latihan serta tugas.<br><br>Meta Analysis is one of the expertise courses that is part of the field of study in the Environmental and Health Statistics course family. The<br>purpose of studying Meta Analysis is that students are able to understand the basic concepts and statistical methods for meta analysis, as well<br>as strategies for interpreting the results of meta analysis on a real problem, both in its development and application. Through this course, it is<br>hoped that students will have the learning experience to think critically and be able to give the right decisions about the appropriate metaanalysis method on a problem and its solution. The learning strategies used are discussions and exercises and tasks.</td></tr>
<tr><td>Bahan Kajian: Materi Pembelajaran/ Course Material</td><td>Dasar Sains, Teori Statistika, Pengumpulan Data, Deskripsi dan Eksplorasi, Komputasi dan Data Processing, Pemodelan, Pemerintahan dan Kependudukan, Kesehatan dan Lingkungan<br>Basic Science, Statistical Theory, Data Collection, Description and Exploration, Computational and Data Processing, Modeling, Government and Population, Health and Environment</td></tr>
</table>

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|---|---|
| **Pustaka/** ***References*** | **Utama/*Primary*:** |
| | 8. Borenstein M, Hedenganes LV, Higgins JPT, and Rothstein HR, 2009. Introduction to Meta-Analysis. John Wiley dan Sons, Ltd. |
| | **Pendukung/*Secondary* :** |
| | 1. Bohning, D., Sasivimol, R., and Ronny, K. 2008. Meta Analysis of Binary Data Using Profile Likelihood. Chapman dan Hall/CRCTaylor dan Francis Group.<br>2. Joachim Hartung, Guido K., and Bimal, K. S. 2008. Statistical Meta Analysis with Applications. John Wiley dan Sons, Inc., Publication<br>3. John, E., Hunter, Frank L. and Schmidt. 2004. Methods of Meta Analysis. Sage Publications, Inc.<br>4. Larry, V., Hedenganes, and Ingram, O. 1985. Statistical Method for Meta Analysis. New York : Orlando San Diego.<br>5. Sterne JAC (editor). 2009. Meta-Analysis in Stata: An updated Collection from the Stata Journal. Stata Press.<br>6. Whitehead, A. 2002. Meta-Analysis of Controlled Clinical Trials. A. Whitehead Copyright. John Wiley dan Sons, Ltd. |
| **Dosen Pengampu/** ***Lecturers*** | Prof. Dr. Bambang Widjanarko Otok, M.Si.<br>Santi Wulan P, M.Si, Ph.D |
| **Matakuliah syarat/** ***Pre-requisite Course*** | Analisis Regresi, Analisis Data Kategori<br>*Regression Analysis, Categorical Data Analysis* |

| **Mg Ke-** ***Week*** | **Kemampuan akhir tiap tahapan belajar (Sub-CPMK)** ***Final capability for each learning step*** | **Penilaian** ***Evaluation*** | | **Bantuk Pembelajaran, Metode Pembelajaran, Penugasan Mahasiswa, [Estimasi Waktu]** ***Learning Format Learning Methods Assignment for Student [Estimated Time]*** | | **Materi Pembelajaran [Pustaka]** ***Learning Material [References]*** | **Bobot Penilaian (%)** ***Evaluation Weight (%)*** |
|---|---|---|---|---|---|---|---|
| | | **Indikator** ***Indicator*** | **Kriteria & Bentuk** ***Criteria and Format*** | **Luring** ***Offline*** | **Daring** ***Online*** | | |
| **(1)** | **(2)** | **(3)** | **(4)** | **(5)** | **(6)** | **(7)** | **(8)** |

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|---|---|---|---|---|---|---|---|
| **1** | Dapat menjelaskan statistic dasar yang berhubungan dengan meta analisis dan perhitungan secara lengkap meta analisis<br>*Can explain basic statistics related to meta analysis and calculation in full meta analysis* | 1. Mengetahui penerapan metode analisis meta di permasalahan riil (konsep dasar statistika)<br>2. Mampu menghitung konsep matriks yang sering digunakan dalam meta analisis<br>*1.Knowing the application of meta analysis methods in real problems (basic concepts of statistics)*<br>*2.Able to calculate matrix concepts that are often used in meta analysis* | Observasi di kelas<br>*Observation in the classroom* | Ceramah Interaktif,<br>Diskusi,<br>Latihan Soal,<br>Seminar<br><br>*Interactive Lectures*<br>*Discussion*<br>*Exercise*<br>*Seminar*<br><br>**TM: 3x50"**<br>**LT: 3x60"**<br>**BM: 3x60"** | | 1. Mengetahui penerapan analisis meta di permasalahan riil.<br>2. Dapat membedakan antara data univariat dan data multivariate.<br>*1. Knowing the application of meta analysis in real problems.*<br>*2. Can distinguish between univariate data and multivariate data.* | 10% |
| **2** | Dapat menjelaskan statistic dasar yang berhubungan dengan meta analisis dan perhitungan secara lengkap meta analisis<br>*Can explain basic statistics related to meta analysis and calculation in full meta analysi* | Mengetahui konsep dari ukuran efek, ukuran presisi dan ukuran efek heterogenitas<br><br>*Knowing the concept of effect size, precision measure and heterogeneity effect size* | Tugas,<br>Kuis<br>*Writing Task, Quiz* | Ceramah Interaktif<br>Diskusi<br>Praktikum<br>Latihan Soal<br>Observasi<br><br>*Interactive Lectures*<br>*Discussion*<br>*Practices*<br>*Exercise*<br>*Observation*<br><br>**TM: 4x3x50"**<br>**LT: 4x3x60"**<br>**BM: 4x3x60"** | | 1. Mengetahui konsep Effect Size pada analisis meta<br>2. Mengetahui konsep Ukuran Presisi pada analisis meta<br>3. Mengetahui konsep ukuran heterogenitas pada analisis meta<br>*1. Knowing the concept of Effect Size in meta analysis*<br>*2. Knowing the concept of Precision Measure in meta analysis*<br>*3. Knowing the concept of heterogeneity measures in meta analysis* | 25% |
| **3** | Mengetahui langkah-langkah yang harus dilakukan dalam Meta-analisis untuk mean satu sampel<br>*Knowing the steps to* | Dapat menentukan, menghitung dan menginterpretasikan ukuran efek pada uji hipotesis rata-rata satu populasi univariat<br><br>*Can determine, calculate and* | Tugas,<br>Kuis<br>*Writing Task, Quiz* | Ceramah Interaktif<br>Diskusi<br>Praktikum<br>Latihan Soal<br>Observasi | | 1. Menentukan statistik uji pada hipotesis rata-rata satu populasi,<br>2. menghitung ukuran efek pada hipotesis rata-rata satu populasi | 25% |

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| | *perform in Meta -analysis to mean one sample* | *interpret the size of the effect on the hypothesis test of the average of one univariate population* | | *Interactive Lectures*<br>*Discussion*<br>*Practices*<br>*Exercise*<br>*Observation*<br><br>**TM: 4x3x50"**<br>**LT: 4x3x60"**<br>**BM: 4x3x60"** | | 3. menginterpretasikan ukuran efek pada hipotesis rata-rata satu populasi<br>*1. Determining test statistics on the hypothesis of averaging one population,*<br>*2. Calculating the size of the effect on the hypothesis of the average of one population*<br>*3. interpreting the size of the effect on the hypothesis of the average of one population* | |
| **4** | Mengetahui langkah-langkah yang harus dilakukan dalam Meta-analisis untuk mean satu sampel<br>*Knowing the steps to perform in Meta -analysis to mean one sample* | Dapat menentukan, menghitung dan menginterpretasikan ukuran presisi pada uji hipotesis rata-rata satu populasi univariat<br><br>*Can determine, calculate and interpret precision measures on the hypothesis test of the average of one univariate population* | Tugas,<br>Kuis<br>*Writing Task, Quiz* | Ceramah Interaktif<br>Diskusi<br>Praktikum<br>Latihan Soal<br>Observasi<br><br>*Interactive Lectures*<br>*Discussion*<br>*Practices*<br>*Exercise*<br>*Observation*<br><br>**TM: 4x3x50"**<br>**LT: 4x3x60"**<br>**BM: 4x3x60"** | | 1. menghitung ukuran presisi pada hipotesis rata-rata satu populasi<br>2. menginterpretasikan ukuran presisi pada hipotesis rata-rata satu populasi<br>*1. Calculating precision measures on the hypothesis of averaging one population*<br>*2. interpreting precision measures on the hypothesis of the average of one population* | 25% |
| **5** | Mengetahui langkah-langkah yang harus dilakukan dalam Meta-analisis untuk mean satu sampel<br>*Knowing the steps to* | Dapat menentukan, menghitung dan menginterpretasikan ukuran efek heterogenitas pada uji hipotesis rata-rata satu populasi univariat | Tugas,<br>Kuis<br>*Writing Task, Quiz* | Ceramah Interaktif<br>Diskusi<br>Praktikum<br>Latihan Soal<br>Observasi | | 1. menghitung ukuran heteroge-nitas pada hipotesis rata-rata satu populasi<br>2. menginterpretasikan ukuran heteroge-nitas | 25% |

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| | *perform in Meta -analysis to mean one sample* | *Can determine, calculate and interpret the size of the heterogeneity effect on the hypothesis test of the average of one univariate population* | | *Interactive Lectures*<br>*Discussion*<br>*Practices*<br>*Exercise*<br>*Observation*<br><br>**TM: 4x3x50"**<br>**LT: 4x3x60"**<br>**BM: 4x3x60"** | | pada hipotesis rata-rata satu populasi<br>*1. Calculating precision measures on the hypothesis of averaging one population*<br>*2. interpreting precision measures on the hypothesis of the average of one population* | |
| **6** | Mengetahui langkah-langkah yang harus dilakukan dalam Meta-analisis untuk perbedaan mean dua sampel Effect<br><br>*Knowing the steps to be done in the Meta - analysis for the difference in the mean of two Effect samples* | Dapat menentukan, menghitung dan menginterpretasikan ukuran efek dan ukuran presisi pada uji hipotesis rata-rata dua populasi univariat<br><br>*Can determine, calculate and interpret effect measures and precision measures on hypothesis tests of the average of two univariate populations* | Observasi di kelas<br>*Observation in the classroom* | Ceramah Interaktif<br>Diskusi<br>Praktikum<br>Latihan Soal<br>Observasi<br><br>*Interactive Lectures*<br>*Discussion*<br>*Practices*<br>*Exercise*<br>*Observation*<br><br>**TM: 2x3x50"**<br>**LT: 2x3x60"**<br>**BM: 2x3x60"** | | 1. Menentukan statistik uji pada hipotesis rata-rata dua populasi,<br>2. menghitung ukuran efek dan presisisi pada hipotesis rata-rata dua populasi<br>3. menginterpretasikan ukuran efek dan presisi pada hipotesis rata-rata dua populasi<br>*1. Determining the statistics of the test on the hypothesis of an average of two populations,*<br>*2. Calculating the size of the effect and the precision on the hypothesis of the average of two populations*<br>*3. interpreting effect size and precision on the hypothesis of the mean of two populations* | 15% |
| **7** | Mengetahui langkah-langkah yang harus dilakukan dalam Meta- | Dapat menentukan, menghitung dan menginterpretasikan ukuran efek heterogenitas pada uji | Observasi di kelas<br>*Observation in the classroom* | Ceramah Interaktif<br>Diskusi<br>Praktikum | | 1. menghitung ukuran heteroge-nitas pada hipotesis rata-rata dua | 15% |

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| | analisis untuk perbedaan mean dua sampel Effect<br>*Knowing the steps to be done in the Meta - analysis for the difference in the mean of two Effect samples* | hipotesis rata-rata dua populasi univariat<br><br>*Can determine, calculate and interpret effect measures and precision measures on hypothesis tests of the average of two univariate populations* | | Latihan Soal<br>Observasi<br><br>*Interactive Lectures*<br>*Discussion*<br>*Practices*<br>*Exercise*<br>*Observation*<br><br>**TM: 2x3x50"**<br>**LT: 2x3x60"**<br>**BM: 2x3x60"** | | populasi<br>2. menginterpretasikan ukuran heteroge-nitas pada hipotesis rata-rata dua populasi<br>*1. Calculating the Heteroge - nity Measure on the Hypothesis of the Mean of Two Populations*<br>*2. interpreting the measure of heteroge -nity on the hypothesis of the average of two populations* | |
| **8** | **ETS/*Midterm*** | | | | | | |
| **9** | Dapat menjelaskan Model Fixed Effect pada Meta Analisis<br><br>*Can explain the Fixed Effect Model in Meta Analysis* | Dapat menentukan, menghitung dan menginterpretasikan ukuran efek dan presisi pada Model Fixed Effect dengan statistik tertentu<br><br>*Can determine, calculate and interpret effect size and precision on Fixed Effect Models with certain statistics* | Observasi di kelas<br>*Observation in the classroom* | Ceramah Interaktif<br>Diskusi<br>Praktikum<br>Latihan Soal<br>Observasi<br><br>*Interactive Lectures*<br>*Discussion*<br>*Practices*<br>*Exercise*<br>*Observation*<br><br>**TM: 3x50"**<br>**LT: 3x60"**<br>**BM: 3x60"** | | 1. Menentukan estimasi, statistik uji pada model fixed efek,<br>2. menghitung ukuran efek dan presisisi pada model fixed efek<br>3. menginterpretasikan ukuran efek dan presisi pada model fixed efek<br>*1. Determining estimates, test statistics on fixed effect models,*<br>*2. Calculating Effect Size and Precision in Fixed Effect Models*<br>*3. interpret effect size and precision in fixed effects models* | 10% |
| **10** | Dapat menjelaskan Model Fixed Effect pada Meta Analisis<br><br>*Can explain the Fixed Effect Model in Meta* | Dapat menentukan, menghitung dan menginterpretasikan ukuran efek heterogenitas pada Model Fixed Effect dengan statistik tertentu | Observasi di kelas<br>*Observation in the classroom* | Ceramah Interaktif<br>Diskusi<br>Praktikum<br>Latihan Soal<br>Observasi | | 1. menghitung ukuran heteroginitas pada model fixed efek<br>2. menginterpretasikan ukuran heteroginitas pada model fixed efek | 10% |

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|---|---|---|---|---|---|---|---|
| | *Analysis* | *Can determine, calculate and interpret the size of the heterogeneity effect on the Fixed Effect Model with certain statistics* | | *Interactive Lectures*<br>*Discussion*<br>*Practices*<br>*Exercise*<br>*Observation*<br><br>**TM: 3x50"**<br>**LT: 3x60"**<br>**BM: 3x60"** | | 1. *Calculating the Size of Heteroginity in a Fixed Effect Model*<br>2. *interpreting the measure of heterogynity in fixed effects models* | |
| **11** | Dapat menjelaskan Model Random Effect dan Campuran pada Meta Analisis<br>*Can explain Random Effect and Mixed Models in Meta Analysis* | Dapat menentukan, menghitung dan menginterpretasikan ukuran efek, presisi dan heteroginitas pada Model Random Effect dan Campuran dengan statistik tertentu pada meta analisis<br><br>*Can determine, calculate and interpret effect size, precision and heterogynity in Random Effect and Mixed Models with certain statistics on meta analysis* | Tugas Tulis,<br>Kuis<br>*Writing Task, Quiz* | Ceramah Interaktif<br>Diskusi<br>Praktikum<br>Latihan Soal<br>Observasi<br><br>*Interactive Lectures*<br>*Discussion*<br>*Practices*<br>*Exercise*<br>*Observation*<br><br>**TM: 2x3x50"**<br>**LT: 2x3x60"**<br>**BM: 2x3x60"** | | 1. Menentukan estimasi, statistik uji pada model random efek dan campuran,<br>2. menghitung ukuran efek dan presisisi, heteroginitas pada model random efek dan campuran<br>3. menginterpretasikan ukuran efek dan presisisi, heteroginitas pada model random efek dan campuran<br>1. *Determining estimates, test statistics on random models of effects and mixtures,*<br>2. *calculate effect size and precision, heterogynity in random effect and mixed models*<br>3. *interpreting effect size and precision, heterogynity in random effects and mixed models* | 10% |
| **12** | Dapat menjelaskan meta regresi linear<br><br>*Can explain meta linear* | Dapat menentukan, menghitung dan menginterpretasikan ukuran efek, presisi dan | Tugas Tulis,<br>Kuis<br>*Writing Task, Quiz* | Ceramah Interaktif<br>Diskusi<br>Praktikum<br>Latihan Soal | | 1. Menentukan estimasi, statistik uji pada model regresi linear,<br>2. menghitung ukuran | 10% |

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|---|---|---|---|---|---|---|---|
| | *regression* | heteroginitas pada Model Regresi linear dengan statistik tertentu pada meta analisis<br><br>*Can determine, calculate and interpret effect size, precision and heterogynity in linear Regression Models with certain statistics on meta analysis* | | Observasi<br><br>*Interactive Lectures*<br>*Discussion*<br>*Practices*<br>*Exercise*<br>*Observation*<br><br>**TM: 2x3x50"**<br>**LT: 2x3x60"**<br>**BM: 2x3x60"** | | efek dan presisisi serta heteroginitas pada model regresi linear<br>3. menginterpretasikan ukuran efek dan presisi heteroginitas pada model regresi linear<br>*1. Determining estimates, test statistics on linear regression models,*<br>*2. Calculating Effect Size and Precision and Heterogynity in Linear Regression Models*<br>*3. interpreting effect size and heterogynity precision in linear regression models* | |
| **13** | Dapat menjelaskan meta regresi logistik<br><br>*Can explain meta logistic regression* | Dapat menentukan, menghitung dan menginterpretasikan ukuran efek, presisi dan heteroginitas pada Model Regresi logistik dengan statistik tertentu pada meta analisis<br><br>*Can determine, calculate and interpret effect size, precision and heterogynity in logistic Regression Models with certain statistics on meta analysis* | Tugas Tulis,<br>Kuis<br>*Writing Task, Quiz* | Ceramah Interaktif<br>Diskusi<br>Praktikum<br>Latihan Soal<br>Observasi<br><br>*Interactive Lectures*<br>*Discussion*<br>*Practices*<br>*Exercise*<br>*Observation*<br><br>**TM: 2x3x50"**<br>**LT: 2x3x60"**<br>**BM: 2x3x60"** | | 1. Menentukan estimasi, statistik uji pada model regresi logistik,<br>2. menghitung ukuran efek dan presisisi serta heteroginitas pada model regresi logistik<br>3. menginterpretasikan ukuran efek dan presisi heteroginitas pada model regresi logistik<br>*1. Determining estimates, test statistics on logistic regression models,*<br>*2. Calculating effect size and precision and heterogynity in logistic regression models*<br>*3. interpret effect size and heterogynity* | 10% |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | | *precision in logistic regression models* | |
| **14** | Dapat menjelaskan konsep Publication bias<br><br>*Can explain the concept of Publication bias* | Dapat menentukan, menghitung dan menginterpretasikan bias publikasi pada suatu model dengan statistik tertentu pada meta analisis<br><br>*Can determine, calculate and interpret publication biases on a model with certain statistics on meta analysis* | Observasi di kelas<br>*Observation in the classroom* | Ceramah Interaktif<br>Diskusi<br>Praktikum<br>Latihan Soal<br>Observasi<br><br>*Interactive Lectures*<br>*Discussion*<br>*Practices*<br>*Exercise*<br>*Observation*<br><br>**TM: 3x50"**<br>**LT: 3x60"**<br>**BM: 3x60"** | | 1. menentukan publikasi bias pada suatu model meta<br>2. menghitung publikasi bias pada suatu model meta<br>3. menginterpretasikan publikasi bias pada suatu model meta<br>*1. Determining publication bias on a meta model*<br>*2. Calculating publication bias on a meta model*<br>*3. interpreting biased publications on a meta model* | 10% |
| **15** | Dapat menjelaskan Analisis Power untuk Meta Analisis<br>*Can explain power analysis for meta analysis* | Dapat menentukan, menghitung dan menginterpretasikan analisis power pada suatu model dengan statistik tertentu pada meta analisis<br><br>*Can determine, calculate and interpret power analysis on a model with certain statistics on meta analysis* | Observasi di kelas<br>*Observation in the classroom* | Ceramah Interaktif<br>Diskusi<br>Praktikum<br>Latihan Soal<br>Observasi<br><br>*Interactive Lectures*<br>*Discussion*<br>*Practices*<br>*Exercise*<br>*Observation*<br><br>**TM: 3x50"**<br>**LT: 3x60"**<br>**BM: 3x60"** | | 1. menentukan analisis power pada suatu model meta<br>2. menghitung power test pada suatu model meta<br>3. menginterpretasikan power test pada suatu model meta<br>*1. Defining Power Analysis in a Meta Model*<br>*2. Calculating Power Tests on a Meta Model*<br>*3. Iinterpreting power tests in a meta mode* | 10% |
| **16** | **Evaluasi Akhir Semester / Ujian Akhir Semester/** *final exam* | | | | | | |