

# Course Schedule

## Day I+II Refresher Course

**Saturday, June 24 – Sun. June 25**

When	What
<b>Saturday</b> 2.30 pm – 5.00 pm	<u>Introduction to R, part I</u> <ul style="list-style-type: none"><li>- Operations on different data types (scalars, vectors, matrices)</li><li>- Control statements (if( ), for( ))</li><li>- Basic graphics</li><li>- Writing functions</li></ul>
<b>Sunday</b> 2.30 pm – 5.00 pm	<u>Introduction to R, part II</u> <ul style="list-style-type: none"><li>- Data analysis</li><li>- Distribution functions</li><li>- Optimization</li></ul>

# Day I Statistical Foundations Course

Monday, June 26,

When	What
9.30am – 12:00pm	<u>Probability and Probability Models</u> <ul style="list-style-type: none"><li>- Random Variables and Distributions</li><li>- Joint and Conditional Distributions</li><li>- Bayes Theorem</li><li>- Probability Models</li></ul>
12.00am – 2.30pm	<i>Lunch Break</i>
2.30pm – 5.00pm	<u>Maximum likelihood methods:</u> <ul style="list-style-type: none"><li>- The logic of maximum likelihood;</li><li>- Statistical inference and maximum likelihood;</li><li>- Maximum likelihood for a battle of the sexes game</li></ul>

# Day II Statistical Foundations Course

Tuesday, June 27,

When	What
9.30am – 12.00pm	<u>Bayesian Statistics:</u> <ul style="list-style-type: none"><li>- Introduction to Bayesian statistics</li><li>- Conjugate bayesian analysis</li></ul>
12.00pm – 2.30pm	<i>Lunch Break</i>
2.30pm – 5.00pm	<u>Methods for Bayesian estimation:</u> <ul style="list-style-type: none"><li>- Markov Chain Monte Carlo Simulation</li><li>- The Gibbs sampler</li><li>- Metropolis-Hastings algorithm</li></ul>
6:30pm – 8:30pm	<i>Welcome Dinner</i>

## Day III Statistical Foundations Course

Wednesday, June 28,

When	What
9.30am – 12.00pm	<u>Applied Bayesian Statistics</u> <ul style="list-style-type: none"><li>- Using JAGS</li><li>- Analysis and replication of Shipan's 2004 article</li></ul>
12.00pm – 2.30pm	<i>Lunch Break</i>
2.30pm – 5.00pm	<u>Bayesian Measurement</u> <ul style="list-style-type: none"><li>- An intuitive overview of Bayesian measurement models</li></ul>

## Day I Theoretical Foundations Course

Thursday, June 29

When	What
9.30am – 12.00am	<u>Normal Form Games and Comparative Statics</u> <ul style="list-style-type: none"><li>- Lecture</li></ul>
12.00am – 2.30pm	<i>Lunch Break</i>
2.30pm – 5.00pm	<u>Sequential Games with Perfect Information</u> <ul style="list-style-type: none"><li>- Lecture</li></ul>

## Day II Theoretical Foundations Course

Friday, June 30

When	What
9.30am – 12.00am	<u>Sequential Games with Imperfect Information</u> – Homework Discussion and Lecture
12.00am – 2.30pm	<i>Lunch Break</i>
2.30pm – 5.00pm	<u>Random Utility Models and Structural Estimation</u> - Lecture and Discussion

## Day III Theoretical Foundations Course

Saturday, July 1,

When	What
9.30am – 12.00am	<u>Comparative Statics</u> – Homework discussion and Lecture
12.00am – 2.30pm	<i>Lunch Break</i>
2.30pm – 5.00pm	<u>Monotone Comparative Statics</u> – Lecture – Course Wrap-up: Further Discussions of Modeling Issues

Sunday Funday - Enjoy Yourself!

Sunday, July 2

# Day I Bayesian Nets

Monday, July 3

When	What
9.30am – 12.00am	<u>Causal Inference, Bayesian Inference</u> <ul style="list-style-type: none"><li>• Causal Inference and Causal Estimands.</li><li>• Basics of Bayesian Inference.</li></ul>
12.00am – 2.30pm	<i>Lunch Break</i>
2.30pm – 5.00pm	<u>DAGs</u> <ul style="list-style-type: none"><li>- DAGS, Structural Models, daggity.</li><li>- Defining estimands on a DAG</li></ul>

# Day II Bayesian Nets

Tuesday, July 4

When	What
9.30am – 12.00am	<u>Theory</u> <ul style="list-style-type: none"><li>– What's a theory? Theories of moderation and mediation.</li><li>– Mapping from a game to a DAG.</li><li>– Probative value and case level process tracing. Illustrations.</li></ul>
12.00am – 2.30pm	<i>Lunch Break</i>
2.30pm – 5.00pm	<u>Stan</u> <ul style="list-style-type: none"><li>- Bayesian inference in Stan.</li></ul>

# Day III Bayesian Nets

Wednesday, July 5

When	What
9.30am – 12.00am	<u>Mixing</u> <ul style="list-style-type: none"><li>– Mixed methods inference in stan.</li><li>– Implications for design.</li></ul>
12.00am – 2.30pm	<i>Lunch Break</i>
2.30pm – 5.00pm	<u>Assessing models</u> <ul style="list-style-type: none"><li>- Strategies for evaluating models</li><li>- Project presentations.</li></ul>

# Day I Mixed Methods in IR

Thursday, July 6

When	What
9.30am – 12.00am	<u>Research design and case studies</u> <ul style="list-style-type: none"><li>– EITM and international cooperation</li><li>– Formal models and case selection</li><li>– Integrating qualitative and quantitative methods</li><li>– New advances in mixed methods</li></ul>
12.00am – 2.30pm	<i>Lunch Break</i>
2.30pm – 5.00pm	Examples: Testing models with case studies

## Day II Mixed Methods in IR

Friday, July 7

When	What
9.30am – 12.00am	<u>Regression and experimental methods</u> <ul style="list-style-type: none"><li>– Formal models and regression methods</li><li>– Selection bias</li><li>– Subsample analysis, covariate balance, and matching</li><li>– Formal models and experimental methods</li><li>– Lab, online, and natural experiments</li><li>– ‘Either or?’, or ‘Both!’</li></ul>
12.00am – 2.30pm	<i>Lunch Break</i>
2.30pm – 5.00pm	Examples: Testing models with regression and experimental methods
6:30pm – 8:30pm	<i>Farewell Dinner</i>

## Day III Mixed Methods in IR

Saturday, July 8

When	What
9.30am – 12.00am	<u>Structural estimation and strategic choice</u> <ul style="list-style-type: none"><li>– Strategic interaction as selection</li><li>– Model misspecification</li><li>– Monte Carlo simulations as assessment tool</li><li>– Strategic estimation</li></ul>
12.00am – 2.30pm	<i>Lunch Break</i>
2.30pm – 5.00pm	Examples: Estimating strategic models