An Introduction to the Bachelor End Project @ IE

Dr. Ir. Mieke van Marion

BEP info meeting, September 11, 2018
Who am I?

Mieke van Marion
Education Coordinator IE&IS
BEP coordinator

PavA 0.46a
m.h.v.marion@tue.nl
Contents

1. BEP General information
2. Research @ Industrial Engineering
3. Set-up of the BEP
   • Timeline
   • Preparation
   • Looking for a company
   • Getting started
   • Deliverables
4. Roles and responsibilities
5. Where to find information?
1. BEP general information

Bachelor End project (BEP)
- final project of the BSc, individual
- Company
- Integration of knowledge and skills
- Academic profile of BSc of IE
- Comparison: Master thesis Project (MTP) as completion of the Master phase

BEP: year 3, quartile 3 and/or 4
- 10 ECTS = 280h
- Quartile planning (Q3 or Q4): 10 weeks, 4 days per week
- Semester planning (Q3 + Q4): 20 weeks, 2 days per week
1. Prerequisites and enrollment

- **At moment of registration:**
  - Propedeuse diploma (60 ECTS)
  - 50 ECTS major courses

**Enrollment (OSIRIS) (15 sept – 1 oct):**

- Email with details from Education Administration
- Indication of preferred research group
  (ITEM, OPAC, HPM, IS)
2. Research @ Industrial Engineering

**Innovation Technology**
Entrepreneurship & Marketing

**ITEM**

**Human Performance Management**

**HPM**

**Information Systems**

**IS**

**Operations Planning Accounting & Control**

**OPAC**
2. Research groups (I)

- **ITEM**
  Understanding innovation processes, developing tools to enhance innovation processes, quality and productivity and/or connecting R&D and marketing/sales

- **OPAC**
  control of operational processes, related to manufacturing systems, distribution, transportation, warehousing, retail, healthcare, public transportation and service processes such as equipment maintenance.
2. Research groups @ IE (II)

- **HPM**
  
  role of the human factor in operational and innovation processes.
  
  Managing work, managing change, managing people

- **IS**

  Business process engineering for smart mobility, health care, business process intelligence, and business process management
2. IE research and your BEP

- **Analysis** of a business problem in the field of IE

- **Learn how to do research**
  - Formulation of a research question
  - Design of a research methodology
  - Data collection and – analysis
  - Formulation of causes/explanations of the problem
  - Indicate directions for improvement
2. Now... some examples

• **OPAC**
  - How can we shorten our delivery times?
  - Why is machine X often not in use?

• **HPM**
  - Why is our absenteeism so high?
  - Why are there problem in our teams?

• **IS**
  - How can our business management be (better) supported by information systems?
  - Which data do we need to improve/ lower the costs of home care?
3. Set-up of the BEP - Timeline

NB: BEP = 10 ECTS = 280h

<table>
<thead>
<tr>
<th>Preparation</th>
<th>week</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
<th>19</th>
<th>20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orientation IE disciplines and enrollment</td>
<td>Orientation IE disciplines and enrollment</td>
<td>Orientation IE disciplines and enrollment</td>
<td>Orientation IE disciplines and enrollment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Allocation TU/e supervisor</td>
<td>Allocation TU/e supervisor</td>
<td>Allocation TU/e supervisor</td>
<td>Allocation TU/e supervisor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>meeting TU/e superv.</td>
<td>meeting TU/e superv.</td>
<td>meeting TU/e superv.</td>
<td>meeting TU/e superv.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Looking for company and defining BEP assignment</td>
<td>Looking for company and defining BEP assignment</td>
<td>Looking for company and defining BEP assignment</td>
<td>Looking for company and defining BEP assignment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Semester prior to BEP</td>
<td>Sem</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>16</td>
<td>17</td>
<td>18</td>
<td>19</td>
<td>20</td>
</tr>
<tr>
<td>BEP Info meeting</td>
<td>BEP Info meeting</td>
<td>BEP Info meeting</td>
<td>BEP Info meeting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enrollment OSIRIS</td>
<td>Enrollment OSIRIS</td>
<td>Enrollment OSIRIS</td>
<td>Enrollment OSIRIS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BC exam weeks</td>
<td>BC exam weeks</td>
<td>BC exam weeks</td>
<td>BC exam weeks</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BEP Assignment CANVAS</td>
<td>BEP Assignment CANVAS</td>
<td>BEP Assignment CANVAS</td>
<td>BEP Assignment CANVAS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BEP</th>
<th>week</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
<th>19</th>
<th>20</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semester planning</td>
<td>BEP planning</td>
<td>BEP planning</td>
<td>BEP planning</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Orientation and project definition</td>
<td>Orientation and project definition</td>
<td>Orientation and project definition</td>
<td>Orientation and project definition</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data acquisition and analysis</td>
<td>Data acquisition and analysis</td>
<td>Data acquisition and analysis</td>
<td>Data acquisition and analysis</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluating and summarizing</td>
<td>Evaluating and summarizing</td>
<td>Evaluating and summarizing</td>
<td>Evaluating and summarizing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assessment meeting</td>
<td>Assessment meeting</td>
<td>Assessment meeting</td>
<td>Assessment meeting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plan of Work (CANVAS)</td>
<td>Plan of Work (CANVAS)</td>
<td>Plan of Work (CANVAS)</td>
<td>Plan of Work (CANVAS)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BC exam weeks</td>
<td>BC exam weeks</td>
<td>BC exam weeks</td>
<td>BC exam weeks</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Final report presentation (CANVAS)</td>
<td>Final report presentation (CANVAS)</td>
<td>Final report presentation (CANVAS)</td>
<td>Final report presentation (CANVAS)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BEP quartile planning</th>
<th>week</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orientation and project definition</td>
<td>Orientation and project definition</td>
<td>Orientation and project definition</td>
<td>Orientation and project definition</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data acquisition and analysis</td>
<td>Data acquisition and analysis</td>
<td>Data acquisition and analysis</td>
<td>Data acquisition and analysis</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluating and summarizing</td>
<td>Evaluating and summarizing</td>
<td>Evaluating and summarizing</td>
<td>Evaluating and summarizing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assessment meeting</td>
<td>Assessment meeting</td>
<td>Assessment meeting</td>
<td>Assessment meeting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plan of Work (CANVAS)</td>
<td>Plan of Work (CANVAS)</td>
<td>Plan of Work (CANVAS)</td>
<td>Plan of Work (CANVAS)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Final report presentation (CANVAS)</td>
<td>Final report presentation (CANVAS)</td>
<td>Final report presentation (CANVAS)</td>
<td>Final report presentation (CANVAS)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BC exam weeks</td>
<td>BC exam weeks</td>
<td>BC exam weeks</td>
<td>BC exam weeks</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assessment (EA)</td>
<td>Assessment (EA)</td>
<td>Assessment (EA)</td>
<td>Assessment (EA)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3. Preparation of your BEP (I)

- **Registration**
  - Orientation on IE research groups
  - Favorite subjects, people, research groups, companies
  - Open: 15 September – 1 October

- **Allocation**
  - Based on preferences of research group
  - Depending on
    - # ECTS at moment of registration
    - Duration of your studies
    - Formerly unsubscribed, NV, ...
3. Preparation of your BEP (II)

- **First meeting with your TU/e supervisor**
  - Become acquainted
  - Mutual expectations (meetings!)
  - Wishes and possibilities for subjects/ projects/ companies

- **Looking for a company**

- **BEP assignment**
  - Deadline 18 January 2019
  - Submission via CANVAS (1BEP0)
3. Looking for a company

- You are responsible
- Always discuss with your TU/e supervisor

sources:
- Own network
- Via TU/e-mentor
- Company websites
- Intership mediation:
  - http://www.integrand.nl
  - http://stageplaza.nl/wo/
  - http://www.studentenbureau.nl/
  - http://www.stagebemiddelaars.nl/ (zoek naar wo-stages)
- Open application
3. The start of your BEP

Before you start
- Access to CANVAS
- BEP assignment approved
- 2\textsuperscript{nd} assessor assigned

1BEP0 is considered a course
- Fixed start and end date (for dates see study guide)
- Fixed deadlines
- Resit (2 weeks)
- No report $\rightarrow$ no resit
- Insufficient after resit $\rightarrow$ new BEP
3. BEP – Deliverables

- **BEP Assignment (before start)**
- **Plan of work (week 2/ week 4)**
  - Research proposal
  - Planning (GANTT chart)
  - Reflection at start BEP
  - Code of scientific conduct
- **Final report (week 8/ week 18)**
  - Reflection at end BEP
- **Final presentation (week 10/ week 20)**
- **Specific dates: see table in study guide**
4. Roles and responsibilities (I)

- **YOU**: project manager of your own BEP!

- **People to help you:**
  - TU/e supervisor
    - Supervision and guidance
      *Content, research skills, professional skills,*
    - Assessment
      *BEP assignment, Plan of work, final report, presentation, PRVs*
    - Contact with 2\textsuperscript{nd} assessor
  - 2\textsuperscript{nd} assessor
    - Controls learning objectives, equal grading among students
    - Additional expert
    - Assessment
      *plan of work, final report*
4. Roles and responsibilities (II)

- **External supervisor**
  - Daily/weekly contact person at company/organization
  - Advisory role in assessment

- **BEP coordinator**
  - All organizatory matters

- **Education Administration**
  - Administrative matters, collection of assessment forms

- **Exam Committee**
  - Appeal, special circumstances, extensions, etc.
6. Where to find information?

- **Studyguide**

- **CANVAS (course code 1BEP0)**
  Make sure you’re registered!

- **Online study guide**
  [https://studiegids.tue.nl/opleidingen/bachelor-college/majors/technische-bedrijfskunde/bachelor-end-project-bep/?L=](https://studiegids.tue.nl/opleidingen/bachelor-college/majors/technische-bedrijfskunde/bachelor-end-project-bep/?L=)

- **Practical information: BEP coordinator**
  mieke.vanmarion@tue.nl, PavA 0,46a

- **Content related questions: BEP coordinator at the different research groups:**
  - HPM: Josette Gevers
  - OPAC: Simme Douwe Flapper
  - ITEM: Sharon Dolmans
  - IS: Remco Dijkman
Good luck!