

# Heincke LaTeX Report Template

Below is a cut and paste of the Report Template with comments and details. The general procedure would be:

1. download the template zip file ([here](#))
2. unzip; which should give you a copy of the file below and a folder "images" with logo images
3. edit the template file name such that it is Heincke-cruise-report-YEAR-YOURNAME.tex
4. scroll down to one or the other chapter which resembles closest to the report you are going to write about
5. check and see what kind of questions have posed
6. fill in the various sections of the report
7. add all the image files to the "images" folder
8. update the bibliography at the end
9. if needed add additional, unused but significant material to the appendix

An alternative would be

1. upload the template (after point 4 above) and images directory to SharedLaTeX - <https://www.sharelatex.com/>
2. edit and complete the report writing
3. download the final pdf, and all LaTeX and images

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Table of Content showing the various chapters and sections in the report !!

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## Header section

DO NOT EDIT THIS SECTION !!

```
*****DO NOT EDIT*****
\documentclass[12pt,a4paper,openany]{scrbook}
\usepackage{bookman}
\usepackage{ifthen} %%% package for conditionals in TeX
\usepackage{longtable} %%% for tables longer than one page
\usepackage{afterpage} %%% figures not before first reference
\usepackage[automark,headsepline,footsepline]{scrpage2}
\usepackage{a4wide,parskip}
\usepackage[dvips]{graphicx}
\usepackage{marvosym}
\usepackage[ps2pdf, %%% hyper-references for ps2pdf
bookmarks=true,% %%% generate bookmarks ...
bookmarksnumbered=true,% %%% ... with numbers
hypertextnames=false,% %%% needed for correct links to figures !!!
breaklinks=true,% %%% breaks lines, but links are very small,
linkbordercolor={0 0 1}% %%% blue frames around links, pdfborder={0 0 112.0}
]{hyperref}% %%% border-width of frames will be multiplied with 0.009 by ps2pdf
%\pdfadjustspacing=1 %%% force LaTeX-like character spacing
```

```

\renewcommand{\indexpagestyle}{scrheadings}
\renewcommand{\chapterpagestyle}{scrheadings}
\pagestyle{scrheadings}
\clearscrheadings
\clearscrplain
\rehead[]{\headmark}
\lehead[\today]{Version: {\em \today} }
\lohead[]{\sectionmark}
\rohead[]{{\small Leg 1,2: 28.02.2011 - 4.03.2011}}
\rofoot[\pagemark]{\pagemark}
\lofoot[Heincke Report]{Heincke Cruise HE-349}
\lefoot[\pagemark]{\pagemark}
\refoot[Heincke Report]{Heincke Cruise HE-349}
\setfootsepline{.4pt}
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
% EXTRA CODE %%
% \usepackage[automark,headsepline,plainheadsepline,footsepline,plainfootsepline]{scrpage2}
% \usepackage[colorlinks=true, pdfstartview=FitV, linkcolor=blue, citecolor=blue, urlcolor=blue]{hyperref}
% \usepackage{palatino}% \usepackage{lmodern}
% \usepackage{psnfss2e - notfound }
% \usepackage{shapepar}
% \usepackage[automark,headsepline]{scrpage2}
% \usepackage{fancyhdr}
% \renewcommand{\chapterheadstartvskip}{\vspace*{-\topskip}}
% \documentclass[12pt,a4paper,twoside]{article}
% \usepackage{a4wide,parskip,times,url,epsfig,color}
% \lohead[]{\headmark}
% \rohead[\date]{\today}
% \cofoot{\includegraphics[scale=0.25]{images/JACOBS_LOGO_RGB.eps}} %--> funktioniert
% \cofoot[\includegraphics[scale=0.5]{images/al.jpg}]{\includegraphics[scale=0.5]{images/al.jpg}} %-->
funktioniert nicht
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
\begin{document}
% \thispagestyle{empty}
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%%% TITLE PAGE %%%
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
\title{{\Large Oceanographic and Marine Geophysical Excursion, Helgoland - Bremerhaven \ \ Leg 1: 28.02.2011 -
02.03.2011 \ \
Leg 2: 02.03.2011 - 04.03.2011 }}
\author{All cruise participants here}
\date{\today}
\titlehead{ \includegraphics[scale=0.1]{images/AWI-Logo} \hfill \includegraphics[scale=0.5]{images
/JACOBS_LOGO_RGB.eps}\ \
Alfred Wegener Institute for Polar Research\hfill Jacobs University Bremen}
\subject{Heincke RV \ \Cruise Report HE-349}
\publishers{\textbf{\underline{Chief Scientists:}} \ \textit{Prof. J. Bijma \& Prof. V. Unnithan}}
% \dedication{to all}
\uppertitleback{Report compiled by Vikram Unnithan (v.unnithan@jacobs-university.de)}
\lowertitleback{This is an educational excursion and forms part of the regular curriculum at Jacobs University
Bremen. Students from the POLMAR PhD Research School will join in Legs I \& II. \emph{Use of data and results
needs the explicit permission of the chief scientist and contributing students}.\ \ \textbf{Printed at Jacobs
University Bremen, \date}}
% \extratitle{for customised title}
\maketitle
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%%% TOC Figures Tables %%%
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
\clearpage
\thispagestyle{empty}
\pagenumbering{roman}
\tableofcontents
\listoffigures
\listoftables
\clearpage
% \resetpages

```

## Participants (filled in by Jelle or Vikram)

```
*****DO NOT EDIT*****
*****
*** START OF TEXT INPUT ***
*****EDIT YOUR SECTIONS*****
\section*{Cruise Participants}
% +++ TO EDIT: remove text in typewriter font +++
{\textbf{Remove the text in typewriter font and add your own.} A table of all the participants}
% +++ TO EDIT: insert your text here +++
example ..
Shipboard Scientific Party
\begin{center}
\begin{table}[!h]
\begin{tabular}{!h}\hline
\textbf{Name} & \textbf{Affiliation} & \textbf>Contact Details} \\ \hline
Vikram Unnithan & Jacobs University & v.unnithan@iu-bremen.de \\
Jelle Bijma & Jacobs University / AWI & \\
\end{tabular}
\caption{}
\end{table}
\end{center}
2.2. Crew List RV HEINCKE
\begin{center}
\begin{table}[!h]
\begin{tabular}{!h}\hline
\textbf{Name} & \textbf{Function} \\ \hline
Papenhagen, Henning & Master \\
Voss, Robert & 1st Officer \\
\end{tabular}
\caption{}
\end{table}
\end{center}
\clearpage
*****
```

## Cruise Objectives

(filled in by Jelle or Vikram)

```
\chapter{Objectives}
by Jelle Bijma \& Vikram Unnithan
\section{Education}
\section{Scientific Research}
```

## Chapter Cruise Narrative (student 1)

```

\chapter{Cruise Narrative}
by Madalina Bonta
\pagenumbering{arabic}
% +++ TO EDIT: insert your text here +++
{\textbf{ Some of the points I will be looking for are:
\begin{itemize}
\item cruise narrative or a cruise diary .. example ..
\item photographs
\item dont forget the crew and science party list ..
\item \textit{please mention the time (UTC, ship time, German summer saving time) formats that you are using}
\end{itemize}
}
}
-----
Cruise Narrative
Important - All times are ship or local time = MESZ (UTC + 2h)
October, 18th 2005

12:00
BGR crew arrived at RV HEINCKE berthed at Fischkai in
Bremerhaven, Germany and started loading and installing scientific
equipment. The installation especially comprised the BGR-MCS and
the Junkers compressor containers from the Alfred-Wegener Institute
(AWI) as well as the sediment echosounder from Innomar, Rostock.
October, 19th 2005
07:00
Installation of equipment continued and test run of the four Junkers
compressors. \\
13:30 Compressors tests successfully completed, When starting the ship's
machinery technical problems were encountered and spare parts had
to be ordered which were subsequently installed. \\

```

## Chapter Navigation (students)

```

\chapter{Navigation}
\textit{by XYZ}
% +++ TO EDIT: insert your text here +++
\section{Description of instruments}
GPS, DGPS, how does these methods work
\section{Method of data collection}
Datadis, raw data NMEA streams
\section{Data Processing techniques}
how is the data processed
\section{Results and analysis}
cruise track figure, plot of line locations (magnetic lines, multibeam lines, sidecan lines) and point
locations such as samples taken
\section{Discussion of the logged data}
resolution, errors in GPS reception
\section{Conclusions}

{\textbf{ Some of the points I will be looking for are:
\begin{itemize}
\item Cruise planning and onboard navigation
\item OLEX
\item ArcGIS
\item Fledermaus
\item Navigation for the magnetometer
\item logging and backup of data on challenger
\item using mbedit to create a gmt plot with time stamps (see mbsystem cookbook)
\end{itemize}
}
}
*****

```

## Chapter Multibeam (students)

```

\chapter{Multibeam}
\textit{by Eduardo Marquez and Max Holicki}
% +++ TO EDIT: insert your text here +++
\section{Aims}
\subsection{Instrument used, general principals of multibeam}
flow diagram, photo of instrument, functioning principal, distinguishing factor from sidescan sonar
\subsection {Method of data collection}
need information on tides, Motion referrence unit, sound velocity profile
list of lines and line numbers collected (start date, time, lat. long and end date, time, lat long filename)
\section {Data Processing techniques}
reduction techniques, pre-processing, post processing
\subsection{Results and analysis}
first results,
\section{Discussion of some of the features observed}
some of the features, errors observed, future work needed
\section{Conclusions}
\textbf{Some of the points I will be looking for are:}
\begin{itemize}
\item describe the system
\item create a circuit diagram, where does the gps, mru data come from, which pc is used, where is the
transducer
\item relative position of the gps, mru and transducers
\item input parameters such as tides, salinity etc
\item input parameter in terms of settings on the fansweep computer
\item look at the manuals
\item working of the fansweep
\item export and creation of the SURF datafiles
\item using mbsystem to create the first look at the data (challenger)
\item selection and first corrections
\item bathymetry data, compare with the exiting dataset (fledermaus)
\item tidal corrections using xtide (challenger)
\item reprocess data ?
\item first results features
\item first results problems and errors
\item future work
\end{itemize}
}
*****

```

## Chapter Sidescan Sonar (students)

```

\chapter{Sidescan Sonar}
% +++ TO EDIT: insert your text here +++
\textit{by xyz}
\section{Aims}
\subsection{Instrument used, general principals of sidescan sonar}
\subsection {Method of data collection}
list of lines and line numbers collected (start date, time, lat. long and end date, time, lat long filename)
\section {Data Processing techniques}
\subsection{Results and analysis}
\section{Discussion of some of the features observed}
\section{Conclusions}

{\textbf{ Some of the points I will be looking for are:
\begin{itemize}
\item - describe the system and the setup with a diagram, what is the layback from the ship ? Make sure you
know all the buttons of the acquisition program on the toughbook.
\item clear survey lines. You can split a large file using the conversion software, but it is easier to start
and stop the acquisition.
\item features and display
\item table with start of line name, lat., long. and datetime, end of linename, lat., long. and datetime
\item Use windows software in the Software directory on Challenger to convert the files to xtf or kml
\item KML can be used to load into google earth to view the results
\end{itemize}
}

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

```

## Chapter Magnetics (students)

```

\chapter{Marine Magnetics}
\textit{by Sayandeep Khan}
% +++ TO EDIT: insert your text here +++
\section{Aim}
\section{Theory}
\subsection{The Earth's Magnetic Field}
\section{Instruments: The Magnetometer}
\section{Data Collection}
list of lines and line numbers collected (start date, time, lat. long and end date, time, lat long filename)
\section{Data Processing}
\section{Results and Analysis}
\section{Discussion and Conclusions}
{\textbf{ Some of the points I will be looking for are:
\begin{itemize}
\item diagram of the setup, layback, onboat system
\item description of the system
\item simple plot of the data
\item identification of major anomalies
\item removal of IGRF, using base station values or the web (ask Joachim Vogt or check out the magnetic
observatory ("Magnetsrode") of the IGEP Braunschweig website {\small \http://www.igep.tu-bs.de/institut
/einrichtungen/magnetsrode/index\_de.html & \ http://www.igep.tu-bs.de/institut/einrichtungen/magnetsrode
/datenarchiv\_de.html}) or \cite{ref1}
\item table of magnetic lines (see sonar for the formats)
\end{itemize}
}

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

```

## Chapter Echosounder (students)

```

\chapter{Parametric Echosounder}
\textit{by Maryam Aljoaan and Olga Demcenco}
% +++ TO EDIT: insert your text here +++
\section{Theory}
\section{Instruments: ship's echosounder, fisheries echosounder}
\section{Data Collection}
list of lines and line numbers collected (start date, time, lat. long and end date, time, lat long filename)
\section{Visualisation}
\section{Results and Analysis}
\section{Discussion and Conclusions}
{\textbf{ Some of the points I will be looking for are:}
\begin{itemize}
\item diagram of the setup, software used, both the recording the replay software for the Simrad system
\item description of the system, both types of echosounders, why is the fisheries echosounder special ?
\item screenshots of the data
\item checkout the datadis shipboard data acquisition system, the depth data comes from the ship's echosounder
\item interesting objects, rock outcrop, fish, sediment etc
\item errors such as heave and pitch, removal of tides ?
\item table of lines (see sonar for the formats)
\end{itemize}
}

```

## Chapter Multinet, Water and Plankton Sampling (students)

```

\chapter{Multinet, Water and Plankton Sampling}
\textit{by Denise Andres, Harri Geiger, Michael Lawrence}
% +++ TO EDIT: insert your text here +++
\section{Theoretical background}
\section{Instruments used}
\section{Data Collection methods; general methods}
\section{Use of the data and samples}
\chapter{Sediment Sampling}
\textit{by Sami Manandhar, Franziska Landes, Steffen Wittek, Marja Seidel}
% +++ TO EDIT: insert your text here +++
\section{Theoretical background}
\section{Instruments used}
\section{Data Collection methods; general methods}
\section{Use of the data and samples}

```

## Chapter CTD / SVP (students)

```

\chapter{CTD \& SVP}
\textit{by Simone Moos, Rasesh Pokharel, Balamuralli Rajasakaren}
% +++ TO EDIT: insert your text here +++
\section{Theory}
\section{Instruments:CTD, SVP}
\section{Data Collection Methods}
\section{Results}
\section{Discussion}
\section{Conclusions}
{\textbf{ Some of the points I will be looking for are:}
\begin{itemize}
\item theory of CTD / SVP functioning
\item differences between the two instruments
\item interesting features in the profiles
\item comparison of results, data processing techniques ?
\end{itemize}
}

```

## Chapter Overall Discussion (Jelle / Vikram)

```
*****  
\chapter {General Discussion, Synthesis and Conclusions}  
by Jelle Bijma \& Vikram Unnithan  
\chapter {Future Work and Collaborations}  
by Jelle Bijma \& Vikram Unnithan
```

## REFERENCES (all, students, vikram, jelle)

```
*****  
\chapter{References}  
% +++ TO EDIT: insert your references here +++  
% +++ TO EDIT: remove text in typewriter font +++  
Example Bibliography  
\begin{thebibliography}{refs}  
\bibitem[ref1]{ref1}http:\verb|//hyperphysics.phy-astr.gsu.edu/hbase/magnetic/magearth.html| ({{\it Information  
on Earth's Magnetic Field}})  
\bibitem[ref2]{ref2}\verb|http://marinemagnetics.com/| ({{\it Information on and specifications of the  
MarineMagnetics Explorer magnetometer}})  
\bibitem[ref3]{ref3}\verb|http://www.marinemagnetics.com/pdf/SeaSPY_Tech_Guide.pdf | ({{\it Information on Proton-  
Spin magnetometers and the Overhauser Effect}})  
\end{thebibliography}  
*****
```

## Appendix (all, students, vikram, jelle)

```
%\appendix  
% +++ TO EDIT: insert your appendix here +++  
%{\textbf{Add things like tables or additional figures here}}
```